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ADDRESSES AND ORIGINAL ARTICLES

MEDICAL LITERATURE*

BY SIR ROBERT HUTCHISON, Bt., M.D. Edin., P.R.C.P.

IT will be agreed, I think, that the amount of the writings of a profession is a measure of its vitality and activity, whilst their quality is a rough indication of its intellectual state. Medical literature, to take our own case, is the currency or medium of exchange by which a man contributes to or borrows from the common stock of knowledge and experience, and the volume of this currency and the character of its metal are of the greatest importance to us all.

ITS BULK

Surveying contemporary medical literature, the first thing that impresses one is its bulk. Go into any large medical library and see the hundreds of periodicals spread out on its tables and the thousands of books on the shelves which line its walls and you cannot fail to be struck—perhaps appalled—by it. Professor Bulloch, who has given great attention to this subject, estimates [1] that there are over 5000 medical periodicals of one sort or another in the world; others have put the number as high as 7000. In this country alone, and we are more modest in our output than many of our neighbours, there are about 130. The number of medical books is of course much greater, the yearly crop of them in Great Britain amounting to more than 400; what it may be for the whole world I am unable to say. The matter can be put in another way: there have been, to quote Professor Bulloch again, on an average two articles published on tuberculosis alone *every day* for the last 40 years. This gives one some idea of the immense fecundity of the medical press. There is no need, however, to labour the point; to paraphrase the words of a famous resolution, medical literature "has increased, is increasing and ought to be diminished." For let there be no mistake about it, this enormous proliferation, this pullulating and fungus-like growth is both a nuisance and a danger. The mere question of storage is itself a problem. In the library of the Royal Society of Medicine room has to be found for 3000 additional volumes each year, and these take up 60 feet of shelving 8 feet high. In a private house it is now impossible to find room even for bound volumes of the weekly journals, while in the modern flat the only room big enough to hold anything larger than a duodecimo is the bathroom. The consequence is that tons of medical journals must be thrown into the dustbins every week.

This, however, is merely the mechanical aspect of the question; more serious is the effect on the very purpose for which medical literature exists—the record and interchange of knowledge. As every delver in the mass knows, it is becoming increasingly difficult to find the needle in the haystack, the few grains in the heap of chaff. Facts may be said to be buried rather than recorded and the fruits of the labours of our predecessors are apt to be lost. More and more, too, is it difficult for the workers in one field to keep in touch with what is being done in others.

Bacon, in one of the aphorisms in the "Novum Organum," says that "when a man addresses himself to discover something he first seeks out and sees before him all that has been said about it by others," but it is almost physically impossible for anyone to do that now, and young writers seem often to ignore almost entirely the previous work on their subject. I am aware that this practice has been defended on the ground that reading up what other people have done tends to make the mind lose its freedom. There may be some truth in this, but none the less, neglect of the previous literature must necessarily involve much needless repetition of effort and searching for that which has already been found, besides making it difficult for the investigator to see his subject in correct focus. The case of those, and they are the great majority of us, who are not investigators but who read only to learn and to keep abreast of current knowledge, is equally hard. Snowed-under by an increasing avalanche of publications, their attention becomes wearied and dissipated till they are tempted to give up in despair.

HOW TO COPE WITH IT

What, then, is to be done? Must we sit still and see science suffocated in its own secretions or can we do anything to mitigate the evil? If that is impossible, how can we as individuals make the best use of medical literature without being overwhelmed by it?

There are some, to consider the last question first, who get over the difficulty by simply ignoring medical publications altogether. I remember, for instance, going into the room of a practitioner, a man of much general reading, and seeing on the floor a large heap of weekly medical journals still enclosed in their wrappers. On my asking him why he kept them there if he did not mean to read them, he replied that he found them useful to throw at the cat! I have also been told, although the story may be apocryphal, of a young doctor who went down to act as holiday locum for a practitioner in the country. The practitioner before leaving told the young man that he would have the run of the whole house except for one room which he must not enter. Needless to say, no sooner had the holiday-maker gone off than the young man made his way into this Bluebeard's chamber only to find it stuffed from floor to ceiling with unopened medical journals. Such was the elderly practitioner's grisly secret. Many of us, it must be confessed, though not so negligent as he, at least welcome the relief of receiving in August or September the students numbers which contain nothing requiring attention and which therefore afford us a temporary respite. For current medical literature cannot be permanently ignored with impunity. As Osler said, "A doctor who does not use books and journals, who does not need a library, who does not read one or more of the best weeklies and monthlies, soon sinks to the level of the cross-counter prescriber, and not alone in practice, but in those mercenary feelings and habits which characterise a trade."

All the busy practitioner can do is to tear out from his weekly journal those articles which interest him and which have a direct bearing on his work, and file them. In this way he will build up a collection to which, if it is properly indexed, he can refer as need arises. If, in addition, he gets every year such a publication as the *Medical Annual*, it should not be difficult for him to keep reasonably up to date.

For the contributor to medical literature, however, who takes into account the work of others this is not enough. He needs in the first place a clue through the labyrinth—a directory to help him to find the publications relevant to his own work—and fortunately we

* The Lloyd Roberts lecture delivered before the Medical Society of London on Nov. 16.

1. Schorstein lecture, *Brit. med. J.* 1935, 2, 810.

have in the *Quarterly Cumulative Index* an excellent guide of this sort to the producers of which medical writers can never be sufficiently grateful.[2]

The next difficulty may be to find the particular journal in which the required paper has appeared. There was an interesting discussion on this point last summer in the correspondence columns of *The Lancet*,[3] originated by Professor McDowall, in which several contributors laid emphasis on the importance of greater coöperation amongst different libraries so that their resources in the form of the less known journals could be pooled for the benefit of readers. No doubt much might be done on these lines to make it easier to consult the rarer publications.

"GETTING UP THE LITERATURE"

But when the required articles have been found they have still to be read and abstracted. This is a laborious business which requires also nowadays a considerable knowledge of foreign languages, and more and more there is a tendency, which seems to have originated in America, to have bibliographies prepared and abstracts made by professional librarians. I confess I view this labour-saving device with no great favour. It seems best for each writer to do his own quarrying, for the librarian, however skilled in his own business, has had no medical training and cannot be expected to know the relative value of different papers nor the points in any which should be picked out. He has therefore perforce to confine himself to a transcription of the summary of the paper, if a summary is given, but for the conscientious original writer such a summary is not enough. The only excuse, indeed, for this way of "getting up the literature" is when the paper is written in some outlandish language, with which a librarian may have at least a working acquaintance, or when the student lives remote from any large medical library. In such a case, however, it is now possible to send a photostat copy of any article required and that is far better than a mere abstract made by someone else.

The work of the literature-hunter would be easier were there more periodical publications of abstracts like the German *Zentralblätter* and *Jahresberichte*. The Medical Research Council produced such a publication for a few years (*Medical Science: Abstracts and Reviews*) which was of great value, but unfortunately it came to an end, and in my own sphere of work I have found *Nutrition Abstracts* very helpful, but even some volumes of abstracts have come to reach a portentous bulk. The ideal, of course, would be an international clearing-house in which the whole periodical medical literature of the world would be sifted by experts and summaries made of such papers as contained any original as opposed to merely repetitive or didactic matter, the summaries being published in English, French and German. In this way the pith and marrow of all current medical literature would be extracted and presented in a readable form, but it is to be feared that such a plan is visionary.[4]

All these devices leave untouched the root difficulty—the immense bulk of raw material to be dealt with. Can this in any way be reduced? This at once raises the question, what prompts doctors to write? Why, as Dr. Johnson wondered of literature in general, have so many people written "who might have let it alone"? The motives for medical writing are no doubt mixed, some reasonable and creditable, others less so. Good reasons are the necessity for putting on record new observations or results of experiments and the impulse to teach—to impart a conviction or to present a subject in a new light. Bad reasons are the desire for prestige and priority (of which the "preliminary note" is a familiar example) or the itch for advertisement. In this connexion I remember many years ago being present at a meeting of the British Medical Association at which the late Lawson Tait held up a copy of the official organ of that body, saying, "I divide this journal into the *intra* professional and the *extra* professional advertising portions." That, of course, was grossly unfair. It is easy to be too censorious in this matter of alleged self-advertisement, for after all the only way in which a young man can let it be generally known by his colleagues that he possesses special knowledge or skill in any department of work is by contributions to the professional journals. Writing from such motives is surely legitimate enough. But one must draw the line at the publication of the same paper in more than one journal and at the equally reprehensible practice of sending out reprints wholesale.

Another motive for writing which is of doubtful validity is the desire for what is nowadays called self-expression—really a form of mental exhibitionism. "Nobody but a blockhead," said Dr. Johnson, "ever wrote except for money," yet the number of these gratuitous medical writers is considerable, however difficult it may be for those of us to whom writing is a pain and toil to realise it. How different was it with a member of the surgical staff of the London Hospital in the 18th century, of whom it is recorded that he was "guiltless of any contribution to medical literature." No doctor, surely, need desire a better epitaph, for silence, as Carlyle said, is the eternal duty of a man.

These motives being apparently so compelling, there is no need to add temptations and inducements to write—that is simply putting mischief into people's heads. Amongst such uncalled-for inducements I would include all ceremonial orations, all presidential addresses, and in particular all memorial lectures (such as this). The last have multiplied to such an extent as to have become a nuisance, and it is increasingly difficult to find people to give them or to collect audiences to listen to them. In any case there are surely better ways of remembering the dead than by boring the living. But even the total abolition of all extraneous inducements to write would make no appreciable difference to the spate of medical literature, so we are driven to consider what can be done to make it more manageable.

HOW TO CONTROL THE OUTPUT

In the first place, there should be strict birth control in regard to new journals. There being far too many already, why add to the number? Secondly, amalgamation of existing journals might well be carried out in many cases. It is absurd, to take only one example, that in this country there should be two journals devoted to diseases of children. Thirdly, some journals might be suppressed altogether. Amongst these I would include those which appeal only to a local patriotism such as (let us say) the *John O'Groats Medical Journal* or the *St. Cyprian's Hospital Reports*. There are five of these local journals in England alone and Scotland could add its quota. I am aware of the justifications put forward for their existence—that they get into print work which would not otherwise appear (surely a very bad reason!), that they publish the proceedings of local societies and obituaries of local medical men,

2. Mr. Leslie Morton's book "How to use a Medical Library" (London: John Bale) may be studied with advantage by all readers.
3. *Lancet*, 1939, 1, 1401 et seq.
4. In leading articles in the *Lancet* (April 1, p. 765 and Aug. 5, p. 321) some suggestions for the better dissemination of scientific information are fully discussed.

that they keep alive a regional patriotism, and so forth, but I doubt if these are adequate. What we should aim at is to have the stream of publications gathered into as few channels as possible. Moreover, superfluous journals lead to superfluous writing, for their editors are sometimes driven to tout for contributions whereas instead of the editor having to woo the writer it should be the writer who has to persuade the editor to find room for his article.

In my view the ideal current medical literature for this country would consist of one good weekly journal catering especially for the general practitioner, which would contain articles mainly clinical in character but also critical reviews and abstracts of the work published in the more specialised periodicals both here and abroad. In addition to this each special branch of medicine would have a journal (but not more than one) appearing at longer intervals, for the publication of original work in that sphere. These journals might also with advantage contain summaries of the more important foreign papers in the specialty. This should meet all the needs both of writers and readers.

STRICTER EDITING

These measures would do something, though not much, to check the flow of superfluous writing, but the chief means to this end must be stricter editing. This would involve, of course, the refusal of many articles which at present find their way into print, but that need cause no regrets, for most of them are better unpublished. Anyone who has to read through large numbers of articles with a view to abstracting from them anything of value must soon be convinced of this. I found, for instance, when doing such work for the *Medical Annual*, that not more than a fifth of the articles sent to me were worth anything—the rest went straight into the wastepaper basket.

Closely involved with this matter of the refusal of articles is the question of payment to writers. It is sometimes argued that an editor cannot look a gift horse in the mouth, but surely if his journal has any right to exist at all there should be competition to get into it; I have been told, too, by a professor in Germany that one reason for the existence of many superfluous medical journals in that country is that they pay their contributors and this tempts to unnecessary writing. Further, the articles which are accepted should be more drastically dealt with. We want more of the severe editing which Langley used to apply in the *Journal of Physiology* when he controlled it. Most articles, for instance, are too long. For that matter almost everything is too long—lectures, speeches, sermons, books. "Was there ever yet anything written by mere man" (if I may again quote Dr. Johnson) "that was wished longer by its readers excepting *Don Quixote, Robinson Crusoe* and the *Pilgrim's Progress*?"—and some readers would not even except these. The capacity of the average human being for sustained attention is greatly exaggerated, and in every sphere there is need to practise the art of leaving off. Powerful astringents, it is true, may be required to check the verbal diarrhœa which afflicts so many writers, but it is the business of the editor to administer them. Meanwhile every paper that lends itself to it should have a summary appended not only that he who runs may read but to facilitate translation of the pith of the paper into the yearbooks. Fortunately the provision of such summaries is a growing practice.

MEDICAL BOOKS

The over-production of books is as great a nuisance as the multiplication of journals and an even greater expense to libraries. The average doctor is not much of a book buyer, and considering how quickly medical books become out of date one cannot blame him; the only best-sellers in medical literature are textbooks which most students use for examinations, or a few books which have a direct bearing on practice, such as works on therapeutics. But if sales are so small, why are so many books written? The publishers, I think, are largely to blame. In their rivalry with their competitors they easily persuade young would-be authors to write for them. The writer is flattered to be asked and argues that whereas he may get some advantage out of writing the book, he can lose nothing by it; the publisher, on the other hand, recoups himself for his many failures at the expense of the more successful authors. This is a vice inherent in commercial publishing for which apparently there is no remedy. Meanwhile it would be a great gain if, instead of issuing expensive and elaborate textbooks, publishers would provide us with more concise, fully-documented monographs giving a complete account of present knowledge in a limited field, and produced as cheaply as possible. We could also do with more yearbooks.

DULLNESS OF MEDICAL LITERATURE

In considering the quality of medical literature as distinct from its quantity one has to distinguish between its content and its form. As regards the content, one is struck by the great excess of facts and the comparative absence of ideas, generalisations and hypotheses; there is, in short, too much observation and recording and too little reflection. Hence much of it is like a heap of bricks without any mortar to hold them together. The power of wide generalisation, of course, is very rare, but medical writers might at least show greater imagination, and the lack of this has the sad consequence that much medical literature is deplorably dull. This dullness is the more curious considering that the subject matter is so interesting. A medical textbook might well be like one of those omnibus volumes of "Detection, Mystery and Horror"—for, after all, diagnosis is detection, disease is often mysterious and, heaven knows, our work is full enough of horrors—but, as it is, the average textbook is about as readable as a telephone directory. Take, for instance, the biography of a red blood corpuscle from its birth in the bone-marrow, with its capillary wanderings and its moving adventures by flood and field to its normal gradual old age and burial in the spleen or to its tragic end in a hæmorrhage. It might be made a vivid Odyssey, but how dull it all sounds in a textbook of physiology—as arid and sterile, as dry and dusty as the sands of the Sahara. But medical writers are not only afraid of romance, they even fight shy of humour. They seem to think that dullness is expected of them and do not agree with the Virgilian tag that "in order to speak truth it is not necessary to pull a long face" and still less with the character of Stevenson's who thought that there was "nothing like a little judicious levity." And yet it is probably true that a writer has never really mastered his material until he can jest about it; until then it has mastered him. Whilst therefore the volume of medical literature betokens an intense activity of observation and research, its content on the whole is dull and pedestrian.

PROLIXITY AND OBSCURITY

As regards their literary form, medical publications are not—perhaps should not be—literature, if one means by that, as the dictionaries say, "writings esteemed for beauty of form or emotional effect."

Brevity, lucidity and a reasonable observation of the rules of syntax are all that can be expected of them; the purple patch is out of place. But these simple demands are often not met. Prolixity and not brevity is too common and is responsible for a good deal of the unnecessary bulk of literature. Lucidity, on the other hand, is to some extent an outcome of the language a writer uses. It is difficult to be obscure in French, easy in German, whilst in the case of English all depends upon how it is written, the man being more important than the medium. In all languages, however, it is probably true that clear thinking and clear writing go together.

Apropos of this, it is one of the unfortunate results of the increasing specialisation of knowledge that the writings of workers in one department are often hardly to be understood by those outside it. I confess, for instance, that many papers on medical psychology, bio-chemistry or iatro-mathematical subjects might, so far as I at least am concerned, just as well be written in Chinese. Much of this obscurity is due to the use of mere jargon, but some of it is unavoidable, for as knowledge extends new terms are needed to embody fresh conceptions. Such neologisms should as far as possible be coined from Greek or Latin roots, despite the fact that Latin is no longer the *lingua franca* of science, but owing to the narrow chauvinism so widely prevalent today there is an increasing tendency to use new words of home manufacture. Many of the new Germanisms are of this class. Such terminological self-sufficiency is much to be regretted.

ABSENCE OF LITERARY FORM

In addition to being prolix and obscure medical literature exhibits only too often an absence of any sense of style or even of grammar. American medical literature, although it contains some admirable material, is apt to offend in both these respects. Gould, himself an American, has said of some specimens of it that "they give shame to gods and men and are fit to arouse the cachinnations of the imps of hell." We are not yet so bad as that here, but the average of medical writing is probably not so high now as it was last century. Certainly we have no textbooks like those of Michael Foster, Fagge or Osler, and the modern multiple productions which have succeeded them have lost the individual touch. It is noteworthy that much of the didactic writing of older days was in lecture form, the lectures of Trousseau, Graves, Watson and G. W. Balfour are classical examples which spring to mind, but somehow the modern publisher does not favour lectures, although they are usually much more readable than the formal textbook.

There are probably several reasons for so much slovenly writing. Often it is the result of mere haste or carelessness, and the dictaphone, the stenographer and the typewriter have much to answer for in this connexion. Medical authors are for the most part not practised writers and should therefore take all the more pains, nor are there lacking plenty of mentors and instructors for the novice both in this country and in America.[5] To a large extent, however, the root of the evil lies deeper and is a consequence of defective literary and linguistic education. It is deplorable, for instance, that in an examination of the standard of the M.R.C.P. it should have been found necessary to drop Latin and Greek because almost no candidate in recent years ever attempted the comparatively simple translations from these languages, whilst very few show even any knowledge of German. The great models of English prose, too, are probably less read by the younger generation, and a literary diet of newspapers, detective novels, and the productions of scenario-writers is no substitute for them.

STYLE AND MATTER

It may be contended in reply to all this that the style of medical writings is not of much importance because these are read primarily for their matter. Unquestionably this is too superficial a view, for, as Allbutt said, "the man of science ought best to know that style and matter can no more be dissociated than skin and bone; but if we write clumsily, loosely or disjointedly our thoughts are accordingly."

It is time, however, that I came to an end, or you will accuse me of not practising the brevity which I have preached. Let me therefore conclude with a quotation from Dr. Charles Singer, himself both a scholar and a scientist, in which this question of the relation of form and substance in scientific writing is very clearly presented:

"Humanities and the sciences are far from being as independent of each other as many suppose. If literary studies lead to clear and effective expression and clear and effective thinking in the domain of science, scientific studies ventilate and inform and vitalise literature. The separation of the two disciplines, especially in the adolescent stage of mental development, does an injury to both."

I believe that to be profoundly true.

5. For example: Allbutt (The Composition of Scientific Papers); Gould (Suggestions to Medical Writers); G. H. Simmons and Morris Fishbein (Art and Practice of Medical Writing); Maud Mellish Wilson (The Writing of Medical Papers); R. D. Gillespie (The Writing of Medical Papers, *Guy's Hosp. Gaz.* May 1930). The M.R.C. "Notes on the Preparation of Reports for Publication" and the *Lancet's* "On Writing for the *Lancet*" are also very useful.

CONSERVATIVE TREATMENT OF LIVER ABSCESSES

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THE recognised treatment of liver abscesses is aspiration and emetine; operation is only resorted to if the abscesses are secondarily infected. Amœbic abscesses, once the amœbæ are destroyed by emetine injections, may be looked upon as sterile. Surgical treatment, apart from the inherent risk attached to any operation, especially on a severely debilitated person, adds the risk of secondary infection. In many tropical hospitals the routine procedure is to explore the abscess, stain a smear of pus, and examine it microscopically. If polymorphonuclear cells or bacteria are found, the patient is sent at once to the surgeon. In our opinion, had case 2 of our series been operated on in his debilitated, toxic, and dehydrated state, he would most certainly have died on the table. The abscess, which was at first apparently sterile, showed a pure growth of *Bacillus pyocyaneus* when aspirated on the second occasion. Since we had successfully treated a case of pyelocystitis due to *B. pyocyaneus* with sulphonamide-P early in 1938, after all other treatment had failed, we decided to try the drug here. The patient recovered. Since then Stewart and Bates (1939) have reported cases of *B. pyocyaneus* infection successfully treated

with sulphanilamide (Streptocide). We do not suggest that all infected or pyogenic liver abscesses should, as a routine, be treated by aspiration and with sulphonamide preparations; but in selected cases conservative treatment seems to be indicated.

CASE-RECORDS

CASE 1.—A man, aged 45, was admitted to University Hospital, Cairo, with dysentery of ten months' duration. Twenty years previously he had had a similar attack. Four months before admission pain and swelling began in the right hypochondrium and had gradually increased since then.

On admission he was weak and very emaciated, with sunken face, pinched features, and an earthy discoloration of the skin. His temperature oscillated between 99·5° F. and 101·3° F. The pulse was weak, the rate being 80, and his leucocytic count was 12,000. The liver was very tender and enormously enlarged; it reached the third intercostal space above and the level of the anterior superior iliac spine below. The apex-beat of the heart was not displaced. Minute ulcers were seen through the sigmoidoscope, but no amœbæ could be found in the scrapings.

The patient was given emetine hydrochloride gr. 1 daily, and on the fifth day 3½ litres (120 oz.) of green pus was aspirated from the liver and coagulated spontaneously within a quarter of an hour—a supposed sign of amœbic-abscess pus.

As the pus was being removed, the liver gradually passed upwards from its abnormal position, 4 in. below the umbilicus, until it could no longer be palpated below the costal margin, and the point of the needle, which was originally directed vertically and could be felt to move freely in a cavity, was gradually pushed upwards by the shrinking liver, until it assumed an angle of 30° to the surface and could be felt tightly compressed by the surrounding liver tissue.

Aspiration was repeated seven, fourteen, and twenty-five days later, 2100 c.cm., 1500 c.cm., and 1000 c.cm. of pus being removed respectively. The pus became less and less viscid and acquired the typical "anchovy-sauce" appearance. On each occasion the enlarged liver shrank back to normal during aspiration. In our experience amœbic pus is generally greenish-yellow on first aspiration and develops the "anchovy-sauce" colour later.

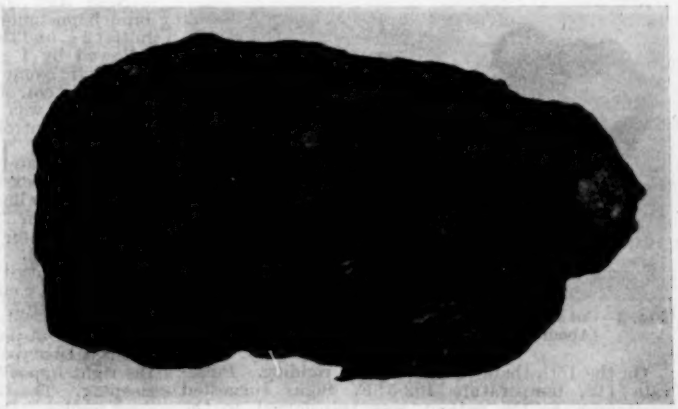

FIG. 2—Pleural surface of right lung showing subpleural abscesses. (Half the natural width.)

Before discharging the patient from hospital, we needled the liver through the sixth space in the nipple line, the seventh space in the anterior axillary line, and the ninth space in the posterior scapular line. All these explorations were negative, and clinically he was cured.

CASE 2.—A man, aged 30, with dysentery of two months' duration and bulging and pain in the right hypochondrium of one week's duration. The general condition was extremely bad, the patient being very toxic and dehydrated. The temperature was 99° F., pulse-rate 85, pulse dicrotic, and the blood-pressure 85/70, leucocytes 14,775 (polymorphs 68 per cent., lymphocytes 30 per cent., hyaline 1 per cent., and eosinophils 1 per cent.). He was immediately given emetine gr. ½ daily, with Coramine, insulin, and glucose by mouth. The subsequent course is shown in fig. 1.

Jan. 23, 1939: 300 c.cm. of very thick green pus was aspirated from the liver. On the 25th the liver reached four fingers-breadth below the costal margin, and, after the removal of 500 c.cm. of thick green pus, returned to normal size. The temperature then gradually rose to 102° F.

Feb. 4: 800 c.cm. of liquid green pus was removed, the offensive smell of which suggested an infection due to *Bacterium coli*. It contained pus cells, and culture produced a pure growth of *B. pyocyaneus*. Sulphonamide-P 1 g. was given twice daily for ten days.

On the 9th the temperature fell to 99·5° F., and 250 c.cm. of pus was aspirated. Soluseptasine 5 c.cm. was injected into the abscess cavity.

On the 22nd the temperature was nearly normal, 250 c.cm. of brown fetid pus was aspirated, and 10 c.cm. of soluseptasine was injected into the abscess. The pus contained pus cells, and a pure growth of *B. pyocyaneus* was again obtained on culture.

On the 24th the white-cell count was 12,400. On March 5 treatment was begun with M. & B. 693 1 g. twice daily until the 13th, when there was a sudden rise of temperature to 104° F. The white cells were 20,000 (polymorphs 82 per cent., lymphocytes 10 per cent., hyaline 6 per cent., and eosinophils 2 per cent.), and 50 c.cm. of pus was aspirated. M. & B. 693 was discontinued and sulphonamide-P was given instead.

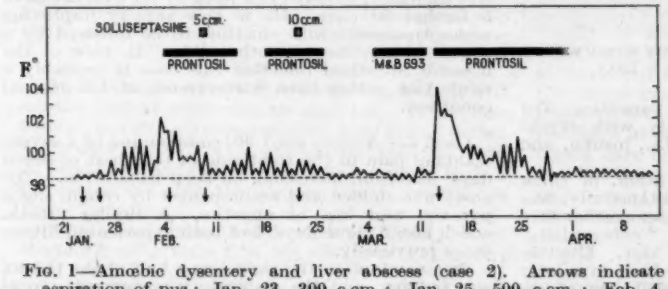

FIG. 1—Amœbic dysentery and liver abscess (case 2). Arrows indicate aspiration of pus: Jan. 23, 300 c.cm.; Jan. 25, 500 c.cm.; Feb. 4, 800 c.cm.; Feb. 9, 250 c.cm.; Feb. 22, 250 c.cm.; March 13, 50 c.cm.

FIG. 3—Cut surface of liver showing five amœbic abscesses. (About three-eighths the natural width.)

On the 15th there was abdominal rigidity. Pulse-rate 112, temperature 102·5° F. Signs suggested peritonitis, so the patient was transferred to the surgical side. On the 18th he was sent back to the medical unit without having been operated on.

On April 1 radiography showed right pneumonitis in the middle zone, suggesting an abscess. This cleared up a week later.

On the 19th the leucocytes numbered 9400 (polymorphs 67 per cent., lymphocytes 24 per cent., monocytes 4 per cent., and eosinophils 5 per cent.). The sedimentation-rate was 100–120. On exploration of the liver blood alone was obtained. Temperature normal.

On June 10 the sedimentation-rate was 19–25, and on the 17th 16–30, when the patient was discharged cured.

CASE 3.—A man, aged 60, who had had dysentery for a month and gradually increasing pain in the right hypochondrium for a week. His general condition was extremely bad, and he looked dangerously toxic and very emaciated. His face was pale, with flushed cheeks and subicteric conjunctivæ. Pulse-rate 110, temperature oscillating between 97·7° and 99·3° F., respiration-rate 28. The liver reached the level of the umbilicus, and the skin overlying it was œdematous. Tenderness was especially pronounced in the seventh space in the midaxillary line. The apex-beat was not displaced. Radiography showed the right leaf of the diaphragm to be 6 cm. higher than the left, and a small effusion was seen in the right costodiaphragmatic sinus. The leucocytic count was

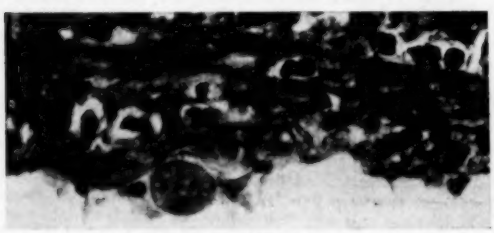

FIG. 4—Wall of a branch of the pulmonary artery with an *E. histolytica* penetrating it. (× 750.)

19,600. The stools contained no parasites. The patient was given emetine gr. 1 daily, with strychnine gr. 1/60, coramine 10 drops t.d.s., insulin, and glucose.

On the day after admission 800 c.cm. of thick chocolate pus, which coagulated spontaneously, was aspirated from the liver. Six days later another litre was removed. It was thinner and "café-au-lait," contained fibrin flakes, and did not clot. Emetine gr. 1 was injected into the abscess. Five days later the leucocytic count was 15,600, and 650 c.cm. of pus was aspirated.

Next day the patient developed a right-sided bronchopneumonia. He was given M. & B. 693, an initial 2 g. and then 1 g. every four hours for two days, followed by 1 g. thrice daily. In spite of this his leucocytic count remained high (18,000), and six days later 600 c.cm. of serous pleural effusion was removed. Aspiration was followed by severe pleural shock, quickly controlled by coramine, oxygen, and morphine.

Ten days later the patient again became dyspnœic, with his apex-beat displaced to 1 in. outside the midclavicular line. The liver was aspirated, 500 c.cm. of very thin "café-au-lait" pus being removed. Two weeks later 1200 c.cm. of serous pleural effusion was aspirated. Two further aspirations of the liver, ten and twenty-two days afterwards, were carried out, 450 and 250 c.cm. of pus being removed. Recovery was uneventful.

CASE 4.—A policeman, aged 30, with dysentery for the last two years, had a severe continuous pain in the right hypochondrium which prevented him from sleeping. The liver reached the umbilicus and was very tender. His leucocytic count was 14,070. He was given emetine gr. 1 daily. On the day after admission 1200 c.cm. of thick yellow matter was

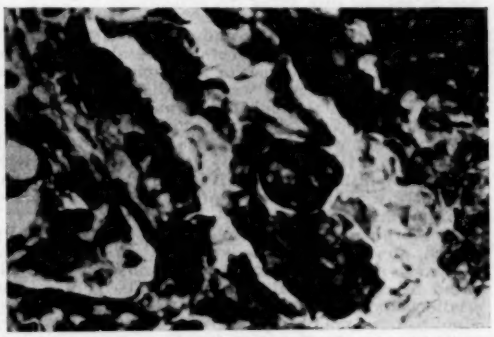

FIG. 5—Section in the wall of an abscess in the right lung. An *E. histolytica* is seen in the middle of necrotic lung tissue.

removed from his liver, and emetine gr. 1 was injected into the abscess cavity. The pus was sterile and contained only degenerate material. A week later 900 c.cm. of matter was removed and emetine gr. 1 injected. The pus was less thick. He was discharged apparently cured, with an impalpable liver, nineteen days later. His leucocytic count had not risen higher than 8000 during the previous two weeks.

This man returned to hospital during the summer five months later, suffering from another attack of amœbic dysentery, with blood, mucus, and numerous vegetable forms of *Entamœba histolytica* in the stools. His liver was again found to be enlarged and tender; the leucocytic count was 13,900; 200 c.cm. of pus was aspirated, followed in a week by the evacuation of a further 80 c.cm. He is now rapidly improving under treatment with emetine, to be followed by a course of emetine bismuth iodide. In view of the massive intestinal infection this case is probably a reinfection rather than a recurrence of his original condition.

CASE 5.—A man, aged 30, complaining of a severe stabbing pain in the right side of the chest of seven days' duration, increasing on deep inspiration. The onset was sudden and accompanied by cough, slight pyrexia, and loss of appetite. A similar attack, which lasted three days, had been experienced fifteen years previously.

On examination the right lower half of the thorax was bulging, and the respiratory movements, vocal resonance, and breath sounds were much diminished.

Dullness on this side extended up to the fourth intercostal space in the midclavicular line, to the third rib in the midaxillary, and to the fourth rib in the infrascapular. Over the left lung a few moist râles could be heard. The right hypochondrium moved very little with respiration and was tender. The liver dullness extended down three fingers-breadth above the umbilicus. The patient was immediately given emetine gr. 1 daily, and 300 c.cm. of pus was aspirated from the liver. Another 250 c.cm. was aspirated five days later. He died next day.

Autopsy revealed subpleural abscesses, lobular pneumonia in the right lung (fig. 2) and antemortem thrombi in the left lung. The liver contained five amœbic abscesses (fig. 3), one 7 cm. in diameter, the others about 5 cm. General peritonitis was also present. Histologically the antemortem thrombus in the left lung contained *Entamœba histolytica*; one amœba, apart from the thrombus, was seen apparently in the process of penetrating the wall of a branch of the pulmonary artery (fig. 4). The areas of lobular pneumonia in the right lung contained *E. histolytica* (fig. 5), and amœbæ were found in the walls of the liver abscesses and in ulcers in the large intestine. This case has been reported in detail by Girgis (1939).

DISCUSSION

Liver abscesses are relatively common in Egypt. Five cases are reported which were seen in the medical unit wards of University Hospital, Cairo, during the last year.

In case 1 an incredible quantity of pus—3500 c.cm. (120 oz.)—was removed by aspiration at one sitting. The total amount of pus removed was 8100 c.cm. (270 oz.) in four aspirations. Notwithstanding this there was no sign of liver insufficiency; and an organ weighing 50 oz. showed itself capable of accommodating nearly one and a half times its volume of pus without rupturing.

Case 2 is probably the first recorded case in which a secondarily infected liver abscess has been cured by drugs of the sulphonamide group, together with repeated aspirations.

Case 3 was an extremely toxic patient, with a very bad prognosis. Here the value of the position of the apex-beat in distinguishing a pleural effusion from a liver abscess and in the diagnosis of a pleural effusion complicating a liver abscess is strikingly shown. Although the right leaf of the diaphragm was 6 cm. higher than the left, the heart was not displaced; it was only when a pleural effusion developed that the apex-beat moved 1 in. outside the midclavicular line.

Case 5 died, but no operation could have saved him. He had seven abscesses in the liver, multiple lung abscesses, areas of lobular pneumonia in the preabscess stage, several *E. histolyticæ*, pulmonary emboli, and general peritonitis. This case is of great interest, for it proves conclusively the septicæmic nature of at least some amœbic lung abscesses. In one microscopic section an isolated amœba is seen penetrating the wall of an artery (fig. 4) independently of any embolism detached from the liver or elsewhere.

SUMMARY

(1) Five cases of amœbic liver abscess treated with emetine and by aspiration are reported. In one case 3500 c.cm. (120 oz.) of pus was removed in one sitting.

(2) One patient was secondarily infected with *B. pyocyaneus* and recovered on sulphonamide-P given by mouth and into the abscess cavity, besides the above treatment.

(3) All the patients but one recovered. Postmortem findings show that this patient could not have been saved by open operation.

One other patient, case 4, however, had another attack of amœbic dysentery, accompanied by further liver abscess formation, five months after discharge from hospital.

(4) In all these cases the extremely toxic condition of the patients rendered operation very dangerous.

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STAPHYLOCOCCAL SEPTICÆMIA COMPLICATING CARBUNCLE OF THE FACE

RECOVERIES AFTER TREATMENT WITH M. & B. 693

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THIS note concerns six cases of carbuncle of the mask area of the face. Five were shown to have staphylococcal septicæmia, and in the sixth, which was fatal, there is little doubt that the condition was the same, though the blood was not cultured. In each case the infection started on the upper lip or the ala nasi and spread to the cheek. The longest interval before admission to hospital was a week; in the other cases it was three to four days. Taken in chronological order, the first four patients died on the fourth or fifth day after admission, whereas the last two have recovered.

Local treatment, in each case almost identical, consisted in the application at short intervals of cool hygroscopic dressings. All the patients at some time received drugs of the sulphonamide group. Uleron was given alone in one (Case 3) and followed by prontosil in another (Case 4), and both patients died. Prontosil or proseptasine was given to three patients (Cases 1, 2, and 5), including one who recovered (Case 5), though it was not given in this case until a fortnight after admission, when the patient appeared to be out of danger (during the acute stages of her illness she had been given M. & B. 693). M. & B. 693 was given for a short time also to case 4, but its administration was not started till the day before her death, when her state was desperate. Case 6 was given M. & B. 693 alone from the start. Staphylococcal antitoxin was given to two patients, case 2 (who died) and case 5 (who recovered), larger doses being given to case 2 (a child of seven) than to case 5.

The treatment of the two patients who recovered differed from that of the others in two respects—namely, the early administration of M. & B. 693 in large doses, and ligature of the angular vein on the affected side to prevent thrombosis of the cavernous sinus. To one of these patients the drug was given wholly by mouth, whereas the other received the sodium salt by injection. There was a third difference in treatment—when the tenseness and induration of the tissues was at its height and there appeared to be scattered areas of localised suppuration, several small puncture incisions were made, under Evipan anæsthesia, care being taken to avoid the healthy edges. It is felt that some benefit may have resulted from the reduction of tension and improved blood-supply that would be expected to follow this operation.

CASE-RECORDS

CASE 1.—A chauffeur, aged 24, was admitted on April 1, 1937, with a history of having had a painful swelling of his nose a week previously. This had

begun to subside but had flared up again, and the tissues round his right eye had become swollen.

When first seen his nose was swollen, red, and painful, and there was œdema round the right eye. The eye was slightly proptosed, and the conjunctiva showed early chemosis. Thrombosis of the cavernous sinus was suspected. His temperature was 103° F., pulse-rate 120, and respiration-rate 32.

Magnesium-sulphate lotion was applied locally, and he was given 20 c.cm. of anti-scarlet-fever serum intramuscularly. Blood-culture gave a growth of staphylococci in twenty hours. On the 2nd he was worse; his temperature was high and swinging, and his pulse and respirations were much as before. The right eye was more definitely proptosed. He was given 10 c.cm. of a 5 per cent. solution of soluseptasine intravenously, and treatment with proseptasine 0·5 g. three-hourly by mouth was started. On the 3rd there was no improvement, and he was given, besides the proseptasine by mouth, 5 c.cm. of prontosil rubrum intramuscularly at 11 A.M. and again at 6 P.M. On the 4th he was worse, and on the 5th he died in coma, with bilateral proptosis.

CASE 2.—A girl, aged 7, was admitted on July 16, 1937. Four days before admission she had a small boil on the right ala nasi, and since then her upper lip had become swollen.

When first seen she looked ill; the right side of her upper lip was swollen, with a small ulcer on its buccal aspect, and there was a bloodstained discharge from the right nostril. There was some swelling of the right side of her face. Her temperature was 102·4° F., pulse-rate 120, and respiration-rate 36. No abnormality was found in her other systems. The urine contained acetone but no other abnormality. Blood was taken for culture but was sterile.

Magnesium-sulphate lotion was applied locally, and she was given 0·5 g. of proseptasine four-hourly. On the 17th a few small furuncles appeared on the upper lip, and the œdema of her face was increasing. Blood-culture was repeated, and staphylococci grew in twenty-four hours. On the 18th the administration of proseptasine was stopped, and she was given 5 c.cm. prontosil rubrum intramuscularly, to be repeated daily. Her face was more swollen, and her temperature remained high. Her pulse-rate and respiration-rate had risen. On the 19th she was given staphylococcal antitoxin 2500 units intravenously at 10 A.M. and again at 6 P.M. This was repeated next day. Her condition continued to deteriorate, and she died at 6 A.M. on the 21st, with great bilateral œdema of the face.

CASE 3.—A man, aged 45, was admitted on Aug. 22, 1938. He had had pain in the left side of his nose for four days, and on the day of admission he had developed an indurated swelling of the left maxillary region, with œdema of the tissues round the left eye. On admission, besides these symptoms there was proptosis of the left eye.

Blood was taken for culture, and staphylococci grew in twenty-four hours. He was treated with magnesium-sulphate lotion locally and uleron, two tablets six-hourly. His temperature was 101·8° F. on admission, and the next day it had fallen to normal, but his general condition was worse. On the 25th signs of meningitis were found, and on lumbar puncture the cerebrospinal fluid, from which *Staphylococcus aureus* was grown, was turbid. He died on the 26th.

CASE 4.—A female factory hand, aged 19, was admitted on Sept. 18, 1938, with three days' history of swelling of the upper lip. It had started as a boil on the left side and had steadily extended.

On examination the lip was swollen and indurated; the left cheek was becoming involved, and, to a lesser degree, the right. Both eyes were closed with soft œdema, but otherwise seemed normal, and there was no proptosis. There was a small pustule near the left nostril, from which a bead of pus was evacuated for culture; a large growth of *Staphylococcus aureus* was obtained. Her temperature was 100·8° F., pulse-rate 100, respiration-rate 20. The urine, which contained a small amount of albumin and a trace of sugar, but no acetone, had a specific gravity of 1·020.

Before admission she had had dressings of magnesium-sulphate lotion; after admission glycerin and magnesium-sulphate paste was applied four-hourly. She was given uleron 1·0 g. thrice daily. Pain was great and morphia needed to control it. During the next three days her condition steadily deteriorated, the local infection spreading, but at no time was there proptosis. Her temperature was swinging between 103° F. and subnormality. Attempts were made to arrest the spread of the infection by painting the healthy surrounding tissues with iodine and by exposing them to small doses of ultraviolet rays, but without success.

No blood-culture was made in this case, but the clinical condition leaves little doubt that it would have been positive.

On the 21st uleron was discontinued, and she was given M. & B. 693 1·0 g. and sulphanilamide 1·0 g. six-hourly. There was, however, no sign of arrest. She died on the 22nd.

CASE 5.—A married woman, aged 22, was admitted on Oct. 1, 1938, with a boil on the right side of her upper lip. Swelling had spread and on admission it involved the whole of the right side of the upper lip and the side of the mouth, and there was much œdema of the inner aspect of the cheek. It had started four days previously. There was soft œdema of the eyelids on the right side. She was very ill and mildly delirious. Her temperature was 102·6° F., pulse-rate 108, and respiration-rate 24. Her urine contained a trace of albumin.

Treatment consisted in three-hourly applications of hypertonic saline and M. & B. 693 1·0 g. four-hourly by mouth. On the 2nd the inflammation was spreading outwards and upwards, and the angular vein on the right side was ligatured under local anæsthesia. Her temperature was swinging, but she had no rigors. Blood-culture grew *Staphylococcus albus* in twenty-four hours.

On the 3rd the temperature was falling but still variable. Her right eye was closed by œdema, and she complained of dysphagia and inability to open her mouth. Her right cheek was purple from poor circulation, and several small pustules had appeared. Several puncture incisions were made in the diseased tissue to relieve the tension. In view of the positive blood-culture, 2500 units of anti-staphylococcus serum were given intravenously. Her temperature continued to fall and from this time did not again rise above 99·5° F., except on two days at the end of the second week.

By the 5th there was definite improvement in her general condition, though her left cheek was now a little swollen. Blood-culture remained sterile after one month. She could open her mouth and swallow comfortably by the 8th; her right eye was open and her cheek was pink instead of dusky purple.

On the 12th she developed an erythematous rash on the trunk, and M. & B. 693 was discontinued. The total dose given was 72 g. That evening her temperature was 101° F., but she did not complain of any symptoms. Next day she was given sulphanilamide 1·0 g. four-hourly for twenty-four hours, and after the 14th there were no further rises of temperature of any importance. Thenceforward her convalescence was uninterrupted and she was discharged from hospital with surprisingly little scarring of the face.

CASE 6.—A woman, aged 25, was admitted on July 3, 1939, with a history of swelling of the right cheek for seven days, accompanied by vomiting for the past two days. On examination there was diffuse induration of the right side of the face, with œdema extending to upper and lower eyelids. A small pustule was present on the upper lip just above the right angle of the mouth. There was no proptosis.

Temperature 103° F., pulse-rate 136, and respiration-rate 28. A diagnosis of carbuncle of the face, with possible septicæmia, was made.

In view of the extent of the œdema and the fact that both eyelids were involved, the right angular vein was ligatured, under local anæsthesia, at the inner canthus on the day of admission. Local treatment consisted of cool sodium-sulphate compresses renewed every hour. The soluble preparation of M. & B. 693 was given intravenously four-hourly in 3 c.cm. doses diluted with 10 c.cm. of distilled water for four injections and continued four-hourly intramuscularly during the night and next day, for the patient could not keep anything down by mouth and swallowing was impossible. On the third day the patient was able to swallow, and M. & B. 693 was administered by mouth in 1·0 g. doses every four hours until July 13.

A blood-culture on the day of admission revealed the growth of *Staphylococcus aureus*, after eighteen hours' incubation, which proved on subculture to be a β-hæmolytic type. Blood-cultures were taken daily for eight days. The culture was positive on the first three days but remained negative after that.

The patient was seriously ill till July 10, being often delirious and attempting to get out of bed. During this time the temperature varied between 103° and 97° F., with a pulse-rate varying between 136 and 96. By the 8th the patient had developed enlarged upper deep cervical glands, and the eyelids by this time were closed. Incisions in three different places in the face were made under evipan anæsthesia, for it was thought that suppuration had become localised; but only blood oozed from the incisions. Blood-counts were taken every few days, but no evidence of agranulocytosis was found.

After the 10th the facial condition gradually improved, until by the 17th no evidence of carbuncle could be found. The facial induration, the cervical glandular enlargement, and the œdema had completely disappeared. On the 14th, however, the patient complained of pain in the right thigh and groin. The temperature had remained normal on the 13th, but rose again on the evening of the 14th to 100° F. There was some inguinal adenitis on the right side, but radiography of the hip showed no evidence of osteomyelitis, or of arthritis. There was spasm of all muscles round the joint.

The administration of M. & B. 693 was begun again in 1·0 g. doses by mouth every four hours on the 18th, and continued until the 25th. The total dose given was 118 g. The pain was present until the 23rd, when it disappeared; the glandular enlargement gradually decreased, and free movement of the joint was now possible. A blood-culture on the 20th proved negative. The temperature varied between 101° F. and normality until the 30th, since when it has remained normal, the patient now feeling well, eating well, and having no abnormal symptoms.

SUMMARY

Six cases of carbuncle of the face, including five in which staphylococcal septicæmia was proved, are described. Two of the patients, who were treated with M. & B. 693 in large doses at an early stage, and by ligature of the angular vein on the affected side to prevent thrombosis of the cavernous sinus, recovered. The other four patients, who did not receive this treatment, died, although they had other drugs of the sulphonamide group.

The results of this small series of cases suggest that the early use of M. & B. 693 in large doses, together with early ligature of the angular vein, is of value in such cases.

We wish to thank Dr. E. C. Hadley, medical superintendent, for permission to publish these cases; Dr. A. P. M. Page, deputy medical superintendent, for his assistance; and Dr. E. M. Ward, pathologist, and the laboratory staff for their coöperation.

SEPTICÆMIA DUE TO *STAPHYLOCOCCUS ALBUS*

TREATED WITH M. & B. 693

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So far as we are aware no cases of septicæmia due to the white staphylococcus treated with M. & B. 693 (Dagenan) have been published. The case described below appears worthy of record in view of the serious nature of the condition, further complicated by a secondary hæmorrhagic meningitis, and the remarkable cure effected.

A nulliparous widow, aged 44, employed as a housemaid, was admitted to the French Hospital on May 29, 1939. She said that when she was 38 the catamenia, which had hitherto been regular and normal, became excessive. A large uterine fibroid was discovered and after its treatment with X rays the periods ceased rapidly and did not recur. Her present illness began ten days before admission with headache and feelings of weakness. Two days later she experienced a sudden sharp pain in the region of the right scapula; appetite had disappeared, she could not sleep, she felt extremely unwell, and the bowels had become obstinately constipated. She was sent to hospital, with a diagnosis of nephritis, complaining of the pain in the right scapular region and of retention of urine with tenesmus.

On examination: temperature 99·8° F., pulse-rate 104, blood-pressure 180/100; heart and lungs normal. Palpation of the abdomen and examination per vaginam revealed a mass the size of a full-term fœtal head, obviously a fibroid, which filled the pelvis and reached the umbilicus; it was movable and not painful to pressure. The patient was unable to pass water, but catheterisation of the bladder yielded 650 c.cm. of urine, which contained albumin 10 mg. per 100 c.cm., some epithelial cells and red blood-cells; culture proved sterile. Examination of the nervous system showed nothing abnormal but there was some dilatation of the retinal veins of the left eye. Next day the temperature had risen to 103° F., the pulse-rate was 112, prostration was severe, and stiffness of the neck was apparent.

Lumbar puncture yielded a red-stained fluid, which showed a total protein content of 800 mg. per 100 c.cm.; total chlorides 720 mg. per 100 c.cm.; urea 40 mg. per 100 c.cm.; and 15 lymphocytes per c.mm. The Wassermann reaction was negative; xanthochromia was present, compatible with central hæmorrhage; tubercle bacilli were not found. No culture of the cerebrospinal fluid was made.

On May 31 the general condition appeared worse, the temperature and pulse-rate remaining about the same. The stiffness of the neck persisted. Blood-culture gave a single large colony of *Staphylococcus albus*. The same organism was now recovered in culture from the urine. Blood examination gave the following results:—

Red cells	5,200,000	Polymorphs	77 %
White cells	32,800	Lymphocytes	19 %
Hæmoglobin	84 %	Eosinophils	1 %
Colour-index	0·8		

The blood-urea was 48 mg. per 100 c.cm. A mild papilloedema was present. Retinal tension was raised from the normal 50 to 75–80 mm., the blood-pressure remaining at 120/100. At 11 A.M. on this day treatment with M. & B. 693 was instituted, 1 g. (2 tablets) every three hours.

Next day (June 1) the temperature had fallen to 101° F. Culture of the blood yielded one small colony

of *Staphylococcus albus*, but the urine was sterile. Lumbar puncture yielded a fluid containing albumin 650 mg. per 100 c.cm. and total cell-count of 10 lymphocytes; urea 40 mg. per 100 c.cm. By the fourth day of treatment the temperature had fallen to 99·0° F. and the pulse-rate to 100, the stiffness of the neck was less, and the patient began to pass urine unaided. Culture of the blood and of the urine gave negative results, and the urine contained no abnormal elements. The cerebrospinal fluid, though still exhibiting a mild xanthochromia, was otherwise normal; the leucocytosis had disappeared. The drug was continued for a further three days, during which time very rapid recovery, obvious from day to day, took place.

The sequence of events in this case seems to have been (1) retention of urine due to mechanical interference by a large fibroid; (2) infection of the urinary tract by *Staphylococcus albus*; (3) infection of the blood by the same organism, with a secondary hæmorrhagic meningitis; and (4) rapid cure of the infection with M. & B. 693, with quick recovery. The total dose was 42 g.

HÆMOGLOBIN SOLUTION AS A BLOOD SUBSTITUTE

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A complete review of the experimental work on blood substitutes may be found in a recent paper by Amberson (1937). He concluded that dissolved hæmoglobin is not toxic to vertebrates if it has been properly freed from stromata, and if the solution is properly balanced. It is able both to carry oxygen and maintain the colloidal osmotic pressure. In mammalian preparations, in which all the normal blood has been washed out and replaced by hæmoglobin-Ringer-Locke solution, oxygen consumption continues at the normal level. Hæmoglobin in solution, however, leaves the blood-vessels rather quickly, passing into lymph and urine and being taken up by cells of the reticulo-endothelial system, and is not, therefore, able to maintain life for more than 36 hours after complete removal of the normal blood.

We believe that despite the development of a technique for the storage of whole blood there will be an important future, especially in cases of acute blood loss, for a solution capable of ensuring normal tissue oxygenation. A 5 per cent. hæmoglobin-Ringer's solution (Amberson-Hœber) possesses this property, as is well illustrated by the experiments reported by one of us (O'Shaughnessy 1939), in which it was found possible to maintain the higher cerebral function of cats and dogs by perfusing the brain with the solution while cardiac action was temporarily suspended. Laked blood has been widely used for limb perfusion experiments, and it was confirmed (Slome and O'Shaughnessy 1938) that the hæmoglobin-Ringer's solution was capable of maintaining the integrity of the nerve-endings in a limb isolated from its normal blood-supply for a period of hours. In normal circumstances a limb deprived of its circulation becomes insensitive to traumatic stimuli after half an hour.

One of us (L. O'S.) had intended to publish separately the results of experimental work begun in 1934 under the direction of Sir Henry Dale and with the assistance of Dr. G. L. Brown and continued at the Buckston Browne Research Farm. In these experiments a series of animals—dog, cat, rabbit and monkey—were bled one third of their blood-volume and immediately received by intravenous injection an equivalent volume of the solution. No ill effects were observed, and subsequent examination some months later showed that the kidneys were normal. In another series of animals the solution was found to be effective in maintaining the blood-pressure after hæmorrhage.

CASE-RECORDS

This brief account is restricted to the course pursued by four patients to whom the solution was given.

Case 1.—A housewife, aged 48, was undergoing a course of radiotherapy for advanced carcinoma of the cervix uteri. She had lost no blood for over a week. Her blood-hæmoglobin was 42 per cent. After preliminary alkalinisation of the urine she received 600 c.cm. of the solution intravenously in 30 minutes, a rate of 20 c.cm. a minute. The transfusion was begun at twice this rate, and when she had received about 80 c.cm. she became flushed and dyspnœic, and complained of tightness in the chest and of pain in her back and loins. The pulse remained unchanged. These symptoms subsided soon after the transfusion was halted, and did not recur when it was resumed at the slower rate. At the end the rate was purposely quickened without the patient's knowledge, and she at once complained of tightness in the chest again. There were no untoward after-effects. The following morning (16 hours later) she declared that she felt better. The blood-hæmoglobin was 44 per cent., the blood-plasma containing no free hæmoglobin. A catheter specimen of urine was hæmoglobin-free. Two blood-transfusions were given three and four weeks later, and she was evacuated with a blood-hæmoglobin of 68 per cent. An intradermal test for hæmoglobin sensitivity performed four weeks after she received the solution was negative.

URINARY FINDINGS IN CASE 2

Hours after transfusion	Amount of urine (ounces)	Hb.	Reaction	Deposit
2	28 (catheter)	++	Alkaline	—
7	2	++	„	—
13	1	++	„	—
15½	4	++	Neutral	—
19½	5	++	„	—
21	7	+	Acid	—
23	6	+	„	—
28	8	+	Alkaline	+
30½	5	Trace	„	+
33½	8	—	„	+
39	8	—	„	+
41½	8	—	„	+

Case 2.—A spinster, aged 47, had been in hospital for 3½ months suffering from chronic myeloid leukæmia. Since admission her blood-hæmoglobin had fallen from 70 per cent. to 32 per cent., she had developed persistent albuminuria and on one occasion hæmaturia, and her general condition had deteriorated greatly. After preliminary alkalinisation of the urine she received 1 litre of the solution intravenously in 35 minutes without any symptoms other than a slight

tightness in the chest and an exacerbation of her usual dry cough. A quarter of an hour after the transfusion the patient had a rigor lasting 20 minutes, during which the pulse-rate rose from 94 to 108 a minute. The urinary findings are given in table I. It will be seen that a deposit appeared when the urine was (inadvertently) allowed to become acid. This was found to consist of granular material chiefly in the form of loose tubular casts. The total amount of hæmoglobin excreted in the urine was estimated (as iron) and found to be only 20 per cent. of the amount given in the transfusion. No noticeable jaundice developed. The patient died 15 days later. At post-mortem examination the diagnosis of leukæmia was confirmed, the spleen being enormous and the kidneys containing numerous leukæmic infarcts. No free iron was demonstrated in the liver or kidneys and only the usual small amount in the spleen. Microscopic examination of these viscera showed leukæmic changes only.

CASE 3.—A housewife, aged 32, was suffering from severe local necrosis following radium and X-ray treatment for advanced carcinoma of the cervix uteri. Her general condition was fair, but her blood-hæmoglobin was only 26 per cent. While arrangements were being made for a continuous drip-transfusion of blood and after preliminary alkalinisation of the urine she received 250 c.cm. of the solution intravenously in 60 minutes. Owing to the small size of her veins and in order to avoid cutting down on them a hypodermic needle was used, which accounted for the small amount given and the time taken to give it. She experienced no symptoms during the transfusion, but had a slight rigor at the end. The patient was incontinent of urine, and it is not known whether any hæmoglobin was excreted by the kidneys. She subsequently received a drip-transfusion of 1500 c.cm. of blood, and her blood-hæmoglobin rose to 68 per cent. An intradermal test for hæmoglobin sensitivity performed a fortnight after she received the solution was negative.

CASE 4.—A bus conductor, aged 40, was suffering from carcinoma of the rectum. A previous laparotomy had revealed that the growth was inoperable and a colostomy had been performed. It was considered unlikely that he would benefit by radiotherapy. His general condition was poor, his blood-hæmoglobin 36 per cent. and he was intolerant of iron by mouth. After preliminary alkalinisation of the urine he received 200 c.cm. of the solution in 30 minutes. When about 50 c.cm. only had been given, he complained of pins and needles in his back and loins, radiating round to the front. There was no dyspnœa, tightness in the chest, change of colour or of pulse. The symptoms subsided as soon as the injection was halted, and did not recur as long as a rate of 5 c.cm. a minute was not exceeded. At the end of 30 minutes he began a rigor, and the injection was stopped. There were no ill effects. He passed 25 oz. of alkaline urine during the next 12 hours, but it was hæmoglobin-free. His blood-hæmoglobin the following day was 34 per cent.

This very small series of cases serves only to indicate that the solution is tolerated by the human being even when seriously ill. Further work will show what value it has in tiding over for two or three days an otherwise healthy patient who has sustained a severe hæmorrhage. Present knowledge suggests that the solution can be stored for considerably longer than whole blood.

The findings in case 2 underline the importance of keeping the urine alkaline, and support the hypothesis that hæmoglobin is taken up by the reticulo-endothelial system, for it is surely significant that the only patient of the four to excrete it freely in the urine was one in whom this system had been seriously impaired by leukæmia.

It should be stated in conclusion that there is no complete substitute for blood.

During the period of this experimental work one of us (L. O'S.) was receiving a personal grant from the Medical Research Council, to which he wishes to record his gratitude for scientific as well as financial help. He is also indebted to the president and council of the Royal College of Surgeons of England for the laboratory facilities put at his disposal. We wish to thank Dr. Trevan and Dr. White of the Wellcome Physiological Laboratory for preparing and supplying the solution given to these patients and Dr. W. Allen Daley for permission to publish this note.

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STORAGE OF TRANSFUSION PLASMA

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IN resuscitation work there may be one or both of two distinct objectives: to combat shock and to counteract the effects of hæmorrhage. In shock the plasma protein falls while the red-cell concentration and hæmoglobin percentage rise. Hæmorrhage by itself results in dilution of the blood with consequent falls in red-cell count and hæmoglobin percentage. When shock and hæmorrhage are met with in the same patient, these tendencies partially counteract each other and interpretation of the results of blood tests may be difficult. Nevertheless, if careful note of the clinical condition is supplemented by hæmoglobin estimations, or better still by red-cell counts, it is usually possible to tell which effect is predominant. Falling values will indicate hæmorrhage and call for whole-blood transfusion. The rising values seen in shock are, as clearly indicated by Walther (1937) and others, contra-indications to whole-blood transfusion and are better rectified by the administration of plasma alone.

As was pointed out in THE LANCET of Oct. 14 (p. 840), widespread adoption of intravenous plasma therapy is now a practical proposition. With blood storage depôts now functioning everywhere, large quantities of group O plasma are becoming available. Stored whole blood is not satisfactory for transfusion after about four weeks. Evidence is accumulating that if, at the end of that time, the citrated plasma is drawn off and again stored in the cold, this cell-free plasma remains satisfactory for transfusion over many weeks. Already numerous transfusions of stored plasma have been given without significant reactions being reported.

But it is possible that precautions may have to be taken. Although the group O cells of the universal donor are devoid of the agglutinogens A and B, and are therefore inagglutinable by other human sera, the serum of these group O bloods contains the agglutinins α and β, sometimes in high concentration, and quickly clumps the cells of groups AB, A and B. If the agglutinin titre is high in the serum of a universal donor, many of the recipient's cells, if he belong to a group other than O, may be agglutinated. Severe reactions from this cause have been observed with whole-blood transfusions and their likelihood is evidently greater if large quantities of group O blood are given as in the case of continuous drip transfusions.

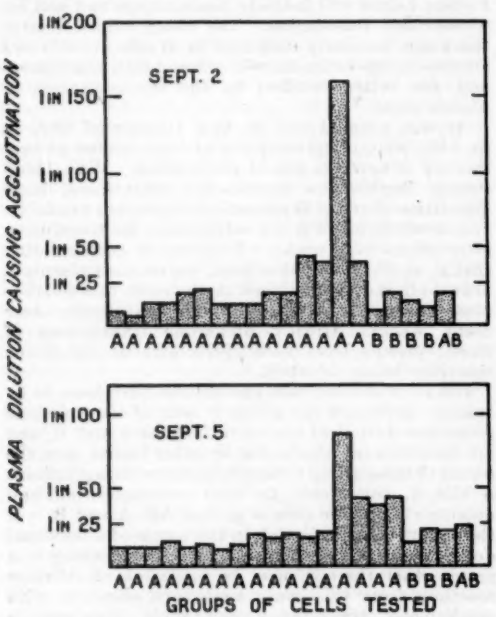
The experiments described below were therefore made to see whether group O plasma, stored under

the conditions at present standardised for emergency work, still contains agglutinins in concentrations likely to cause reaction.

PERSISTENCE OF AGGLUTININS IN STORED PLASMA

On Sept. 2 a number of bottles of citrated whole blood were collected from group O volunteers visiting the hospital. The apparatus and technique recommended by the Medical Research Council were used. The bottles were stored in the cold room for just over three weeks. Thereafter the plasma was aseptically drawn off from the 12 bottles of blood showing no marked hæmolysis and pooled. A further 10 samples of blood collected on Sept. 5 were treated in the same way. The plasma was filtered (Berkefeld), put up in 8 oz. screw-capped, flat bottles and returned to the cold room for further storage. Various dilutions of the plasma were made up at the same time with normal saline and stored in similar bottles. Appropriate tests of sterility were made.

After three weeks (six weeks after the original collection of the blood), samples of the stored plasma were removed and tested for agglutinins. Allowing for the original dilution of the blood by the citrate in the collecting bottles, a series of dilutions of the pooled plasma was made up ranging from 1 in 50 to 1 in 100. At the time large numbers of volunteer donors were visiting the hospital for grouping, so that a series of fresh, citrated cell-suspensions of known group was available. By mixing equal volumes of the above plasma dilutions and cell-suspensions, the agglutinating power of the plasma was tested against various group AB, A and B cells. Agglutination was observed on clean microscope slides at room temperature for 15 min. The results are shown in the figure. The height of the columns indicates the agglutinin titre of six-weeks-old stored plasma towards cell samples whose groups are indicated on the base line.


PLASMA DILUTION CAUSING AGGLUTINATION
1 IN 200
1 IN 150
1 IN 100
1 IN 50
1 IN 25
SEPT. 2
A A A A A A A A A A A A A A A B B B B A B
1 IN 100
1 IN 50
1 IN 25
SEPT. 5
A A A A A A A A A A A A A A A A A B B B A B
GROUPS OF CELLS TESTED

Charts illustrating, by the height of the vertical columns, the agglutinating power of two samples of pooled stored group O plasma on the cells of a series of possible recipients having groups A, B or AB.

The total number of cell and plasma combinations tested was 41. In 33 agglutination did not take place with a greater plasma dilution than about 1 in 20. In 6 agglutination occurred with the plasma diluted 1 in 40. In 2 obvious clumping of the cells took place in dilutions as high as 1 in 80 and 1 in 160.

From so small a number of tests it is impossible to infer the frequency with which, during plasma-transfusion, such specially active agglutination of the recipients' cells is liable to occur. But the experiment at least illustrates the possibility of reactions due to this cause when stored pooled group O plasma is transfused into patients of groups other than O, particularly if it is given continuously and in quantity as by drip methods.

SUGGESTED PRECAUTIONARY TEST

It seems unlikely that single administrations of plasma in quantities of 6 oz. or so to patients of other groups can be particularly liable to produce reactions, otherwise they would already have been noted. But the above results do suggest that when larger quantities are to be given it might be wise to make a preliminary test of the recipient's cells suspended in a dilution of about 1 in 50 of the plasma to be used. In any case the recipient's blood-group should be determined. The plasma at present available is nearly all from group O donors, and if the patient is also of this same group further preliminary tests are unnecessary. But if he is found to be of a group other than O, an agglutination test provides a safeguard.

To facilitate this the bottle of group O plasma which we are now supplying to the wards have, attached to the neck by a rubber band, a small sealed ampoule of the same plasma diluted 1 in 25 with normal saline. After some citrated cells have been obtained from the patient's finger and his group determined, if this is other than group O, one drop of cell-suspension and one drop of diluted plasma from the ampoule are well mixed on a glass slide and watched for 15 min. If there is no agglutination one may assume that the particular plasma-transfusion proposed is not liable to produce excessive agglutination of the recipient's cells. If agglutination does take place at this dilution (about 1 in 50), it is probably advisable to dilute the bottled plasma three or four times with normal saline and to give it slowly.

STORAGE OF PLASMA

In separating and storing plasma from bloods collected in the apparatus recommended by the Medical Research Council minor difficulties have been encountered owing to separation of fibrin after the plasma has been drawn off, passed through a Seitz filter to clear it and rebottled. This fibrin separation continued in the cold room for several days in spite of repeated filtration. It could, however, be prevented by diluting the plasma with sterile normal saline or by adopting Berkefeld instead of Seitz filtration. This matter is at present being further investigated.

CONCLUSIONS

Group O plasma is now available in large quantities as a result of the recently introduced standardised methods of blood-storage, but precautions may be necessary in using it for transfusion.

Group O plasma stored in the cold room retains its agglutinins for many weeks, and in a few cases pooled plasma has been found to agglutinate cells from persons of other groups in very high dilutions.

In order to avoid reactions from this cause, it is suggested that before stored group O plasma is administered to patients of other groups the agglutinating effect of a 1 in 50 dilution of the plasma on their cells should be noted.

REFERENCE

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PREVENTION OF FEAR IN CARDIAZOL THERAPY

BY PRELIMINARY ANÆSTHESIA WITH CYCLOPROPANE OR WITH NITROUS OXIDE

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CARDIAZOL treatment, especially with patients who are not retarded or confused, sometimes causes unpleasant sensations before consciousness is lost. These sensations, though generally indescribable, make the patient disinclined for further treatment. Nausea, vertigo, and a feeling of fear, which, however, does not appear to be the common fear of impending death, are the main sensations, and their abolition is desirable if full coöperation is to be secured.

The choice of the method of diminishing consciousness as a preliminary to cardiazol therapy involves technical difficulties. The analgesic should be easily controllable in its depth and duration; it should not counteract the convulsive effects of cardiazol; it should not constitute a hazard either alone or in combination with cardiazol; and it should be easily administered. Most intravenous anæsthetics have too prolonged an action or prevent the onset of convulsions—e.g., sodium amytal (Cohen 1939 [1]). The possibility of habituation with frequent injections is an objection to morphia. A preliminary insulin coma is too long and somewhat hazardous.

A gaseous anæsthetic therefore seems to be indicated. It is theoretically possible to administer it until consciousness is lost and then to withdraw it, so that cardiazol can be injected at any point in the stage of returning consciousness that seems most suitable, the ideal moment being presumably one at which the minimal dose of cardiazol can be given. Chloroform and ethyl chloride are too dangerous. Ether is unpleasant and in repeated doses may have a deleterious effect on the liver. Two apparently suitable anæsthetics are nitrous oxide and cyclopropane. Nitrous oxide is readily available and requires no unusual apparatus. However, for anæsthesia, an anoxæmia is necessary which, added to that produced by cardiazol, is undesirable. Cyclopropane is relatively non-toxic and rapid in action and contains 80 per cent. of oxygen in an anæsthetic mixture; but it is liable to explode and requires special equipment which is not present in many hospitals.

TECHNIQUE

As a preliminary to either anæsthetic, the patient was not given breakfast, and atropine sulphate gr. 1/100 was administered subcutaneously. After a reassuring explanation of the procedure, the mask was placed on his face and the anæsthetic administered to a point at which the lid reflexes were abolished. As soon as the patient was relaxed, a tourniquet was applied, and a hypodermic needle, attached to the syringe containing the cardiazol solution, was inserted into a brachial vein exactly as in taking a sample of blood. The needle once in, the tourniquet was removed and the anæsthesia discontinued.

With cyclopropane it seemed that the optimal time for the injection of cardiazol was when the patient first moved his eyelids either spontaneously or in response to command. As a rule this happened about a minute after the patient began to breathe room air. The convulsive dose of cardiazol after anæsthesia was never more than 2 c.cm. greater than that without preliminary anæsthesia. In no case did the dose exceed 9 c.cm. If the initial dose was not effective in producing a convulsion, the anæsthesia was resumed and the dose of cardiazol increased by 1 c.cm. When this was unsuccessful, the treatment was resumed two days later with a further increase of 1 c.cm. in the dose of cardiazol.

With nitrous oxide and oxygen the optimal moment for injecting the convulsant seemed to be at a slightly later stage of returning consciousness—that of head movements—for on several occasions no results followed injections at the same point as with the cyclopropane. Whether this difference depends primarily on the reaction to the anæsthetic or is an individual variation is uncertain. With nitrous-oxide anæsthesia the convulsive dose was the same as that required without anæsthesia.

RESULTS

The duration and severity of the convulsion seemed to be unaffected by the preliminary anæsthesia. With cyclopropane it was noted consistently that the deep greyish-blue cyanosis usually seen after the administration of cardiazol was much less, the patients' colour being only slightly less pink than normal. It is possible that this is due to the saturation of the tissues by the high percentage of oxygen in the anæsthetic mixture. The patients treated with nitrous oxide anæsthesia had approximately the same degree of cyanosis usually seen after cardiazol. In these cases we administered pure oxygen for a few breaths in the interval between the discontinuance of the anæsthesia and the injection of cardiazol to minimise the cyanosis produced by the anæsthetic. No untoward complications were seen as a result of the anæsthetic.

In 6 cases cardiazol therapy was preceded by a preliminary anæsthesia: with cyclopropane in 3 cases and with nitrous oxide and oxygen in the other 3. In 5 of these patients anæsthesia was induced because of their dread of cardiazol therapy as a result of previous injections. Of the 6 patients 3 had catatonic schizophrenia and 3 severe depression. In all the cases there was some improvement, and strikingly so in 2 of the depressed patients (the maximum dose and the number of injections were approximately the same as without anæsthesia); hence the results seemed to be comparable in our experience to that produced by cardiazol alone. Since in this report we are discussing the practicability of an adjuvant to cardiazol therapy in selected cases, seeking only to determine whether this technique inhibits the therapeutic effect of cardiazol, no further details of the case-histories are presented.

DISCUSSION

This report embodies observations on only a few patients but they indicate that a preliminary

1. Cohen, L. H., *J. Lab. clin. Med.* 1939, **24**, 681.

anæsthesia can be utilised in cardiazol therapy without necessitating any great increase in the dosage of the convulsant drug. Moreover, and this is the point at issue, from such information as could be derived from the patients, no terrifying sensations were experienced, and only one patient was afraid of the anæsthesia. It is obvious that this procedure is necessary only in selected cases where the dread of cardiazol therapy makes the patient unwilling to have further treatment. Whether the elimination of such fear prevents the patient from resolving his guilt feelings and thus inhibits the therapeutic result is a question that cannot be answered from the present data. It is true, however, that in these 6 patients the usual degree of improvement following cardiazol therapy was noted; therefore the preliminary anæsthesia apparently did not alter the efficacy of the treatment.

The practicability of this procedure having been demonstrated, it is suggested as an adjuvant method to cardiazol therapy for outpatients or office patients who, because of the unpleasant sensations, might not return for such therapy. Such patients might include not only mild schizophrenics but also depressed subjects. Thus the need for admitting such patients into hospital for cardiazol therapy may be lessened.

SUMMARY

General anæsthesia can be induced as a preliminary to cardiazol therapy without interfering with the production of a typical convulsion and necessitating at most a slight increase in the convulsant dose. It makes cardiazol therapy more agreeable for the patient by abolishing the sensations of fear. Cyclopropane is in many ways the more desirable anæsthetic, but nitrous-oxide anæsthesia, because of the simplicity of its administration, may be more practicable.

We wish to thank Dr. William A. Bryan, medical superintendent; the staff of the Worcester State Hospital, Massachusetts, for placing facilities at our disposal; and Dr. R. Guidone for assisting on several occasions.

AUTOMATIC TIDAL DRAINAGE OF THE BLADDER

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AND
P. W. Nathan, M.B. Lond.
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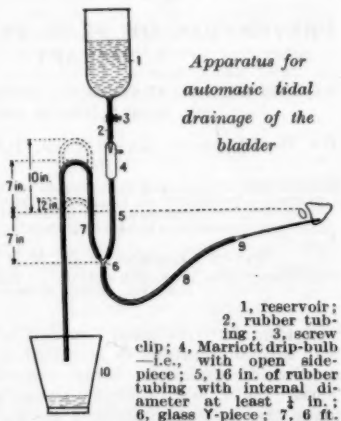
Tidal drainage of the bladder was introduced by Donald Munro, of Boston, U.S.A. He devised an apparatus which distended the bladder to a suitable degree with antiseptic solution and then automatically emptied it. He has established the value of the method beyond doubt; and it is probable that tidal drainage would be used more often, as it deserves to be, if a simpler apparatus than Munro's were employed. With this purpose, we have devised an apparatus with exactly the same action (see figure).

The measurements employed by us need not be followed exactly. The apparatus is set up according to the diagram. The siphon tube (7) may conveniently be fixed by strapping to the drip-bulb. Its lower end should be above the surface of the fluid in the bucket. The tube (8) and glass connecting-piece (9) must contain no air-bubbles; air may be excluded by spigoting the catheter as soon as it is passed, running the antiseptic slowly, and inserting the glass connexion into the catheter while fluid is gushing from both the catheter and the glass connexion. The catheter should not be smaller than size 8 (English); Munro recommends that it should be changed once a week.

Tidal drainage imitates the natural physiology of the bladder. The bladder is filled at a slow-drip rate; as it fills, the intravesical pressure rises gradually until it reaches the level of the siphon-tube. Siphonage then begins and continues until, when the bladder is empty, the siphon-tube is filled by air entering through the side-piece of the drip-bulb. Siphonage then ceases, and the bladder starts to fill again. At this moment there should be no residual urine in the bladder, a fact which may be confirmed by disconnecting the catheter. This cycle continues as long as there is fluid in the reservoir.



Apparatus for automatic tidal drainage of the bladder

1, reservoir; 2, rubber tubing; 3, screw clip; 4, Marriott drip-bulb—i.e., with open side-piece; 5, 16 in. of rubber tubing with internal diameter at least ¼ in.; 6, glass Y-piece; 7, 6 ft. of rubber tubing with internal diameter ¼ in.; 8, 3 ft. of rubber pressure-tubing with internal diameter ¼ in.; 9, glass connecting piece; 10, bucket.

The maximal negative pressure acting on the bladder is equal to the vertical height of the symphysis pubis above the Y-piece; we have found 7 in. a suitable height. The maximal intravesical pressure never rises above the vertical height of the apex of the siphon-tube above the symphysis pubis. The exact height depends on the patient's comfort and the condition under treatment. A height of about 7 in. is correct for the normal bladder, 2 in. for an atonic bladder, and 10 in. or more for a hypertonic bladder. It is impossible for the apparatus to distend the bladder to a greater pressure than the height of the siphon-tube. A suitable rate for the flow of antiseptic solution is 60 drops a minute. Since it is in contact with the vesical mucosa for at least twenty-three hours out of the twenty-four, a mild solution should be used. We used a 1½ per cent. solution of boric acid or, when clots were likely to form, a 3 per cent. solution of sodium citrate, both of which are isotonic with tissues.

The following are the chief applications of tidal drainage:

(1) To prevent the occurrence of infection; it is certainly a life-saving measure in "neurological bladders," as Munro's cases show.

(2) To control the infection of primary cystitis, after oral therapy has failed.

(3) To increase the capacity of a contracted fibrotic bladder by progressively increasing the height of the siphon-tube over a period of weeks.

(4) It may be used wherever an indwelling catheter or repeated catheterisation is indicated, with the advantages that antiseptic solution is almost continuously in contact with the bladder walls, and that it will not allow the progressive contracture of the bladder which occurs with an indwelling catheter draining away continuously.

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REVIEWS AND NOTICES OF BOOKS

Blood Transfusion

By VICTOR HORSLEY RIDDELL, M.D. Camb., F.R.C.S., assistant surgeon and lecturer in operative surgery, St. George's Hospital, London; assistant surgeon, Royal Waterloo Hospital, London; consultant, British Red Cross Transfusion Service. London: Humphrey Milford, Oxford University Press. 1939. Pp. 370. 21*s*.

THIS excellent book could hardly have been published at a more opportune time. Mr. Riddell gives a full account of the practice of blood-transfusion and does not neglect discussion of related theoretical issues. He wisely makes his own experience the chief source of his material and has the courage not to burden his text with multiplication of methods. One useful feature is the discussion of rate and volume in transfusion. The practice of "giving a transfusion"—meaning about a pint of blood in about half an hour—to all cases irrespective of their particular features is passing; Mr. Riddell's book will help the growing adoption of rational principles. Blood-transfusion properly used is a valuable method of treatment. Too often it is so employed that it is either positively dangerous or only very partially effective. Doctors should understand clearly the indications for transfusion, and the principles governing the rate of flow and the volume. Questions of technique are secondary, though the author gives them ample attention; his descriptions and illustrations leave no doubt as to his exact meaning. His account of drip transfusion is excellent; his view is that all transfusions should be of the slow drip type unless used for immediate replacement in acute hæmorrhage. Complications and difficulties are accorded adequate space.

The Races of Central Europe

A footnote to history. By G. M. MORANT, D.Sc. London: George Allen & Unwin. 1939. Pp. 163. 5*s*.

Dr. Morant has chosen a most opportune moment for producing this book. To the physical anthropologist, who just now is rather in the background, it will be especially welcome, while the few craniologists who still survive will feel as they read it that they have not lived and worked in vain. The general reader and let us hope the statesman and politician will probably find the conclusion and epilogue the most attractive part of the book and they will be struck by the clarity with which the author sums up his conclusions. Alas, not all the diagrams reach the same level of excellence as the letterpress. As most old teachers know a diagram should be bold and clear and should not attempt to tell too much; many of these are trying to the eyes and sometimes so involved that much time has to be spent in understanding all that their delineator means them to show.

The reader as he follows the text will learn the unfortunate truth that language is no safe indication of race and that boundaries founded on it generally lead to trouble sooner or later; he will also learn that anthropology shows a better way, for Dr. Morant finds that in the cephalic index—a blessed phrase that is in everyone's mouth nowadays, though there is often some little haziness as to what it means—combined with the blood-groups, the true racial affinities of these mid-European peoples may be determined. Quite a large part of the book is taken up in explaining, criticising and safeguarding this cephalic index and in pleading that at least fifty records are needed before a safe average is reached. Certainly it seems worthy of its well-known reputation as "the anthropologist's sheet-anchor"; and now that the testimony of the blood-groups corroborates its information it is more valuable than ever.

In the epilogue Dr. Morant looks forward to a time when the teachings of anthropology shall have reached writers and readers of newspapers; then "the absurdity of all racial conflicts would be apparent." We hope he may be right; in any case he has in this interesting little book done his share towards attaining so happy a result.

Abdominal Injuries of Warfare

By GORDON GORDON-TAYLOR, O.B.E., M.A. Aberd., F.R.C.S., F.R.A.C.S., senior surgeon and lecturer in surgery, Middlesex Hospital, London. Bristol: John Wright and Sons. 1939. Pp. 87. 10*s*. 6*d*.

MANY of the younger surgeons who are preparing to deal with war casualties have never seen a perforating wound of the abdomen. They know in theory the surgical principles which govern the treatment of these injuries, but every surgeon has often been forcibly reminded of the inadequacy of such knowledge when he is actually faced with a case for the first time. Those who have had wide experience can help a lot by passing on what they have learned, and Mr. Gordon-Taylor is one of them. The text of his book is concise, his advice practical, and there are a number of useful case-records. He describes operative technique in considerable detail, but more details still might have been given without unduly burdening the text—for instance, when he says that a single layer of suture suffices for the small bowel it would be interesting to know whether he prefers Maunsell's or Connell's suture. But few other criticisms can be levelled against this wise little book. The illustrations, many of them from specimens in the war collection of the Royal College of Surgeons, are excellent.

Radiotherapy in Sinusitis

By W. ANNANDALE TROUP, M.C., M.D. St. And. London: Actinic Press. 1939. Pp. 51. 3*s*. 6*d*.

Dr. Troup is an enthusiast and writes in his preface of the uniformly good results achieved in cases of sinusitis by radiotherapy. He describes briefly the use of ultra-short-wave therapy, but prefers local irradiation by infra-red rays, together with the application of ultraviolet rays to the nostrils and nasopharynx with the Kromayer lamp and general ultraviolet irradiation. Treatment is given daily five or six times, and then three times a week; the total number of treatments seems to range from twelve upwards, one patient having as many as forty-one.

The first chapter is occupied by quotations from various authors who mention, often vaguely, the use of physical therapy in the treatment of sinusitis; the second sets out the physiological action of radiotherapy; the third, the most useful, contains an account of the author's technique; the fourth consists of three pages on adjuvants to treatment, but refers to none of the measures usually adopted by the rhinologist. Finally, Dr. Troup describes six cases treated by radiotherapy, but it is doubtful whether these, or the book as a whole, will enable the practitioner to form an opinion of the value of this method.

Le cancer de l'estomac au début

By RENÉ-A. GUTMANN, médecin des Hôpitaux de Paris; IVAN BERTRAND, directeur à l'École des Hautes Etudes; TH. J. PERISTIANY, assistant à la consultation de gastro-entérologie de la Salpêtrière. Paris: G. Doin et Cie. 1939. Pp. 493. Frs.360.

THE object of this important work is to stress the vital importance of early diagnosis in cancer of the stomach, and to show how clinical findings and radiological examination can demonstrate the very early lesion. Dr. Gutmann and Dr. Peristiany describe the clinical form of the disease and then, after a section on radiological technique by Dr. J. Garcia-Calderon, the radiographic appearances which correspond to the different types. Finally, Dr. Bertrand gives the pathological anatomy and histology of a number of representative cases. The chief impression left is one of attention to detail. All the possible forms of gastric cancer are grouped under three headings—latent, painless and painful. The authors point out that in many cases the symptoms are not sufficient to send the patient to the doctor before the disease is far advanced, but they believe that where gastric symptoms are present radiography, in experienced hands, offers the best hope of an early diagnosis. Lack of flexibility, small changes in contour and minute filling defects are all significant, and, though appearances on the screen may be helpful, films with a sharp image, good detail and contrast are of much greater value.

The numerous illustrations make a collection of typical radiogram of cancer of the stomach, with operative verification, which will be an education to those who need an intimate knowledge of the many manifestations of gastric disease. Other methods of investigation—gastroscopy, gastric chemistry and the tests for occult blood—are discussed, and there is a short section on surgical treatment. Many beautiful microphotographs illustrate the last section, which mainly deals with the determination of the point where it can be confidently accepted that a gastric ulcer has undergone malignant transformation.

Chemist's Dictionary of Medical Terms

(6th ed.) London: *Chemist and Druggist*. 1939. Pp. 304. 8*s*. 6*d*.

THERE is evidently a demand for any book which runs into a sixth edition and demand is presumptive evidence of need. In the very nature of things pharmacists come into contact with doctors, but whether "abactus venter" and "zymotic papilloma"—the alpha and omega of this dictionary—or many of the thousands of medical terms which come between enter into the medico-pharmaceutical conversations is a question which could only be answered satisfactorily by a plebiscite of the members of the two callings. The work of compilation has been done thoroughly and there is certainly no waste of words. Thus dicephalous could not be defined more briefly than "two-headed," psellism than "stammering," or odontiasis than "teething."

Common Skin Diseases

(5th ed.) By A. C. ROXBURGH, M.D. Camb., F.R.C.P., physician in charge of the skin department and lecturer on diseases of the skin, St. Bartholomew's Hospital, London. London: H. K. Lewis and Co. 1939. Pp. 416. 15*s*.

THIS elementary textbook forms a sound introduction to dermatology for students and covers most of the conditions the general practitioner is likely to want to tackle himself. For Dr. Roxburgh has selected his "common" diseases carefully and has written about them in a lucid and readable manner. His style is somewhat dogmatic—an unusual characteristic in books on skin diseases—but students and general practitioners will sacrifice a little accuracy for a solid basis on which to build. X-ray treatment is recommended a shade too freely throughout; the modern trend is to keep this therapeutic weapon in reserve rather than in the front line, notable exceptions to this being in chronic lichenified dermatitis, chronic patchy eczema, and lichen simplex chronicus, where X ray is the treatment of choice. The ingenious theory here accepted that seborrhœa may be caused in an infant by dandruff falling from the head of its mother or nurse appears to lack definite proof. Dr. Roxburgh makes no mention of streptococcal tonsillitis being a frequent ætiological factor of erythema multiforme, and he includes recurrent scarlatiniform erythema in the chapter on the primary erythrodermias His book is profusely illustrated with first-class photographs.

Antenatal and Postnatal Care

By FRANCIS J. BROWNE, M.D. Aberd., D.Sc. Edin., F.R.C.S.E., F.R.C.O.G., professor of obstetrics and gynæcology, University of London; director of the obstetric unit and obstetric surgeon, University College Hospital, London. London: J. and A. Churchill. 1939. Pp. 622. 21*s*.

THIS edition has been thoroughly revised, with two new chapters, one on heredity, which contains an interesting account of mendelism and the inheritance of morbid characteristics, and another on unsuccessful pregnancy. The excellent section on the toxæmias of pregnancy includes the results of an extensive follow-up of toxæmic patients conducted under Professor Browne's supervision at University College Hospital since 1926. This seems substantially to support the view that pregnancy may be regarded as one of the most delicate tests of renal function, in the presence or absence of any previous history of nephritis. Among the book's other excellent features are Dr. John Boycott's chapter on the anæmias of pregnancy, now rewritten, and Dr. R. W. A. Salmond's account of the uses of radiology in obstetrics. Professor Browne's is without doubt one of the best works on this subject.

The Fetal Pig

An Introduction to Mammalian Anatomy. By HAZEL E. FIELD, Ph.D., associate professor of biology at Occidental College, Los Angeles. London: Humphrey Milford, Oxford University Press. 1939. Pp. 53. 3*s*. 6*d*.

THIS little book appears to be written for some sort of university course far removed from ordinary biology or medicine. It claims that such a course will make those that attend it "more intelligent citizens, more understanding of the work of the nurse and the physician, and less easily misled by the sales talks of nostrum vendors and the health faddists." Without knowing the other constituents of the course it is impossible to say how far Professor Field's little book fulfils its purpose. It seems obvious, however, that so very slight an account of the dissection of an unborn pig can hardly in itself prove a prophylactic against the "sales talks" of anyone. The author appears to assume that it will be used by students "who will probably never dissect any more animals" and so it is difficult to see what place it could fill in any of our British universities. As an elementary guide-book to the main anatomical features of the unborn pig, designed to assist those undertaking its dissection, it is plain and concise. The description is clarified by 16 simple figures, and a combined glossary and index is added.

THE LANCET

LONDON : SATURDAY, NOVEMBER 18, 1939

THE WORKMAN AND HIS JOB

In its twenty-one years of life the interests of the Industrial Health Research Board have widened.[1] While the board have never ceased to inquire into the effects of environment on health and working capacity, they have at the same time progressively concerned themselves with the general problems of the standard of fitness both of the entrant to industry and of the established worker. With those problems in mind they have set on foot inquiries into the physique of men and women in industry, into vocational guidance and selection directed towards preventing the round peg finding its way to the square hole, into the temperamental qualities which go to make "industrial misfits," and into the special problems of accident proneness. The difficulty is to obtain reliable data for measuring the fitness of the worker in different industries at different times.

Two crucial factors are involved—the physical and the statistical. There is, and can be, no simple definition of physical fitness; though there must be a connexion between physique and fitness, measurements of height and weight and strength cannot be combined into a single index of fitness. The short man with no great physical strength may be quite unsuited to the police force or the army, but be well adapted to many industrial occupations and maintain a high standard of health at his work. In time it may be possible to lay down reasonable standards for various occupations—for light, moderate, and heavy work—but at present it might be more profitable to turn to a simpler concept, namely the presence or absence of mental and bodily defects or disease. By systematic clinical examination of workers it should be possible to determine the incidence of defined defects, to see whether their frequency is increasing or decreasing, and to assess the most profitable means of preventing them. Such measures of incidence would undoubtedly contribute to knowledge of the specific conditions leading to "unfitness." At this point the statistical aspect intrudes. Taking first the established worker, to produce these figures of incidence the fundamental requirement is the examination of a large and representative sample of the industrial workers of the country, including men of all ages, areas and types of employment, those who happen to be unemployed at the time of the survey, and those who are temporarily or chronically incapacitated. But here the inquirer has serious obstacles to surmount. Compulsory powers of examination do not exist, and workers are often prejudiced against any form of examination; they are apt to fear that if they do not do well in the tests they may lose their jobs. On the other hand, the examination of a sample of volunteers might be quite unrepresentative of the total body of men.

If the inquirer's attention is transferred to the entrants to industry, the obstacles to exact inquiry are nearly as great. Under the new Factories Act the examinations of would-be entrants to industry are much more thorough than formerly, and may be expected eventually to provide valuable data, as do now the school-leaving medical examinations; but in the meantime the only source available for such studies appears to be the records of the large industrial organisations which demand a full examination of applicants for employment. These records may not supply an accurate picture of the whole universe of entrants to industry nor one comparable from one branch of industry to another. The requirement of a medical examination must necessarily lead to some self-selection on the part of the candidates, and this self-selection may ebb and flow with the state of the labour market and the possibilities of alternative employment. Often, too, the applicants have passed before a lay committee before reaching the doctor. It seems likely that the picture finally presented to the medical officer will err on the side of optimism, but to what extent it will err, and whether equally from one time to another, is indeterminate. Finally, any comparisons of the incidence of specific defects between now and some past period calls for carefully maintained standards and definitions if it is to give any valid evidence of improvement or deterioration.

The ideal, of course, is the proper examination of the entire universe of entrants, and, at intervals, of established workers. This desideratum exists for the school-child, for whom the consensus of data shows a rising standard in health and physique. It does not yet exist for other groups. Data about the physical state of a large cross-section of the population, including defects and causes of rejection, have only once been obtained in this country by the Ministry of National Service in 1917–18. In that case the sample was not really unselected. Now all men of 20–21 are having to undergo an examination assessing their fitness for military duties, and this time the sample is as nearly as possible unselected. Here is an opportunity to obtain a real picture of the state of health of young men at or about the age they enter industrial life, which would provide a valuable base line for future comparisons. In selecting recruits, or in selecting entrants to industry, however, too much stress must not be laid on physical attributes, for in both the candidate's mental make-up is equally important. The mentally unstable youth, who in slighter degree merely makes an inefficient soldier, and who under strain becomes a potential victim to neurosis, is the industrial "misfit." In greater degree he is the psychotic, who may make a fine soldier or be a canker to morale and end up in a mental hospital. Here too, the

1. An account of the board's report for 1938–39 appears on p. 1085.

experience of the military medical boards may help the Industrial Health Research Board in their investigation of a problem which has exercised their minds from the start of their work.

GENERALISED STAPHYLOCOCCAL INFECTION

EVERY student knows that a staphylococcal infection usually results in a localised abscess, in contradistinction to the spreading or invasive lesion characteristic of the streptococcus. But at times the staphylococcus produces a generalised infection which from the occurrence of metastatic abscesses is usually called pyæmia, although the generic term septicæmia—indicative of a widespread infection of the tissues and not merely the occasional spilling of organisms into the blood-stream from a local focus (bacteræmia)—may be justifiably used. Staphylococcal lesions in two sites—the face and the bones—are particularly apt to be followed by a generalised infection, and the results are usually disastrous. The case-fatality rate of staphylococcal septicæmia has varied in different series from 66 to 90 per cent.; the prognosis is worse after carbuncle than osteomyelitis, in the very young and the aged than in adolescents, and in the presence of complicating disease, especially diabetes.[1] But, as the late Dr. A. P. BEDDARD used to say, in staphylococcal septicæmia the betting is on the staphylococcus every time.

Treatment of staphylococcal septicæmia aims at (*a*) eradicating the source of infection and (*b*) sterilising the blood-stream. It is not always easy to deal with the local focus, particularly in lesions about the face, and in such cases ligature of the angular vein is recommended to prevent the spread of infection to the cavernous sinus. In osteomyelitis, too, there is a school of thought that advocates non-operative treatment, but in general the principle of removal of the infecting focus which is feeding the blood-stream with septic emboli must be regarded as sound. Attempts at sterilisation of the blood have in the past been mostly unsuccessful, although repeated blood transfusions or the injection of staphylococcal antitoxin has sometimes seemed to do good.

It was natural, therefore, that the sulphonamide group of drugs should be tried in these severe infections. Experimentally, in staphylococcal infections of mice, M. & B. 693 and possibly Uleron have been more effective than sulphanilamide itself, and this finding is now being supported by clinical observation. MITCHELL[2] reported the successful treatment of five severe cases of osteomyelitis (in two of which the affected bone was not drilled) with uleron; on the other hand, WADE[3] has recorded a case of staphylococcal septicæmia which failed to respond to uleron but appeared to react to M. & B. 693. In our present issue Dr. ABRAMSON and Dr. FLACKS report six cases of severe carbuncle of the face, of which the first four patients—three of them treated with proseptasine or uleron—died, whereas the other two who were given M. & B. 693, and had the angular vein on the affected side tied, both lived. Staphylococcus antitoxin was given to one of the patients who recovered (and also to one who died), and in view of the part which antitoxic immunity possibly plays in limiting the spread of staphylococcal infection,[4] a combined serum and chemotherapy would seem worth a more extended trial in this as in other bacterial infections. In the fifth case of this series and in the case reported by Dr. GALEWSKI and Dr. STANNUS on p. 1067, *Staphylococcus albus* was the organism recovered from the blood. While white variants of *Staph. pyogenes* do occur, the possibility of such strains being non-pathogenic contaminants must be considered, and it becomes essential to test their pathogenicity, which can be done by the simple coagulase test.[5]

Isolated instances of cure apparently effected by a particular treatment may not mean much, but the clinical evidence now accumulating about the benefit of chemotherapy in staphylococcal septicæmia encourages a more optimistic prognosis. Its comparatively long course, however, must not be allowed to tempt the clinician to give these new drugs for longer periods than have been found safe in other infections.

GENES AND HORMONES

FEW are qualified to discuss the relationship of genetic and endocrine factors and the ways in which their complex interaction in the higher vertebrates may have arisen. As an endocrinologist who is also a geneticist Professor DANFORTH of Stanforth University, California, is able to treat this difficult subject in a particularly refreshing and stimulating manner.[6] Dealing first with genes, he emphasises the modern tendency to think of the whole gene complex as a unit, in which, for the production of a given trait, any particular gene has perhaps no more intrinsic importance than many others. Under conditions other than those holding in a particular organism, the seemingly significant gene for the same trait might be an entirely different one, and one should no longer speak of *the* gene for a trait as though that gene and no other could or does produce the effect studied. Genes and cytoplasm are related in a kind of functional symbiosis; the actual anatomical and physiological reactions are a function of the cytoplasm, but the behaviour of the cytoplasm is conditioned by the genes. The reactivity of the cytoplasm to the genes may be the result of gradual cytoplasmic evolution, and the cytoplasm may adjust itself to already existing genes, some of which become effective in individual development only when the cytoplasm has gone through certain preliminary phases. This adjustment of cytoplasm or of tissue to

1. Mendell, T. H., *Arch. intern. Med.* June, 1939, p. 1068.
2. Mitchell, A., *Brit. med. J.* 1938, **2**, 1200.
3. Wade, H. J., *Lancet*, April 1, 1939, p. 756.
4. Downie, A. W., *J. Path. Bact.* 1937, **44**, 573.
5. Cruickshank, R., *Ibid*, 1937, **45**, 295.
6. Danforth, C. H., Harvey Lectures, 1938-39. Baltimore: Williams and Wilkins Co.; London: Baillière, Tindall and Cox. 1939. Pp. 279. 18s. (p. 246).

external or internal stimuli is better seen with the hormones. It appears unlikely that hormones have been evolved in such a manner as to stimulate pre-existing tissues of a given composition. On the contrary, there is good reason to believe that many hormones existed before the tissues that they now stimulate, and that it was the tissue that evolved the power to utilise or respond to the hormone. A striking example of this, which Professor DANFORTH might well have quoted, is the production of prolactin—the hormone which in mammals stimulates the secretion of milk—in reptiles, amphibians and fish. It has no apparent function in these animals, and certainly cannot be concerned with lactation!

The sharp line of demarcation that it has been customary to draw between vitamins, genes and hormones does not seem likely to remain tenable. Organisers also appear to be only components, however necessary, of normally developing cells. Professor DANFORTH suggests that at least some of the vitamins are merely substances upon which protoplasm has become dependent through evolutionary adaptation, and that hormones may be either rather complex vitamins, which the body has learnt to synthesise, or metabolic components of the internal environment to which there have been evolutionary responses analogous to those elicited by factors in the external environment. In this connexion, one is reminded of A. S. PARKES's remark that the substances we now know as hormones were probably once waste products for which animals, in the course of evolution, have acquired a use.[2]

Particularly instructive is the relation of genes and hormones in the determination of sex. The biological importance of sexual reproduction, which provides a means for combining in one individual desirable characters from many sources, has long been recognised. It now appears that sex, starting as a difference between gametes and evolving into a difference between individuals, may now be determined either by genetic or hormonal influences, or by a combination of the two. In either case, DANFORTH believes, the reaction is most simply regarded as a matter of protoplasmic adjustment, where the emphasis should be placed not on the stimuli but on the protoplasm that integrates and utilises them. The two modes of response have often developed side by side in the same stock; for example the dimorphic plumage types of birds may be found to depend either upon genetic or endocrine stimuli for their production. Thus in pheasants four distinct types of plumage are found, corresponding to the four possible combinations of male and female hormone, and male and female cytoplasm and genes, whereas in the dove sex differences are regulated solely by genes, and in the brown leghorn fowl solely by hormones. Once more we are led to suppose that hormones should be regarded as essentially non-specific substances, to which tissues of different species may or may not develop a capacity to respond; each new adjustment has perhaps come about through a chromosomal alteration which imparted to the cytoplasm the capacity to utilise a substance already at hand. It appears, meanwhile, that genes "give character" to the cytoplasm, or "condition" it, while at the same time they supply substances with which it may, during the course of evolution, acquire the ability to react.

1. Discussion introduced by Callow, R. K., *Proc. R. Soc. Med.* 1938, **31**, 841; see *Lancet* 1938, **1**, 436.

READING WITHOUT TEARS

Viscount GORT said recently that the main feature of modern war was its boredom. Occasional intense action is interrupted by large stretches of inactivity, under conditions foreign to any real form of civilised life. The National Book Council has just issued a catalogue of books for the Services,[1] clearly with the conviction that many a man will wish to find comfort and relaxation in the reading of books. In the "Art of Reading," Quiller-Couch tells of a friend "who, being in doubt with what picture to decorate the chimney-piece in his library, cast away choice, and wrote up two Greek words ΨΥΧΗΣ ΙΑΤΡΕΙΟΝ; that is, the hospital—the healing place—of the soul." This blue print for such a hospital is an excellent and comprehensive piece of work; it comprises all departments, from general and reference books, philosophy, religion, science, technical and classical reading, to modern fiction and thrillers. The enjoyment of particular books is such a personal thing that it would be idle to try to assess its virtues or sins of commission and omission. A striking feature of the pamphlet is its unconscious revelation of our tolerance; Karl Marx's "Capital" is recommended equally with Barnes's "Fascism" and Adolf Hitler's "Mein Kampf," and it is not thought dangerous even to suggest the reading of Aldous Huxley's "Ends and Means," or Gregg's "The Power of Non-Violence." Among the classics, it is surprising to find only one volume of Anthony Trollope, who like Jane Austen is surely an author particularly suitable for escape into a steadier, quieter world. P. G. Wodehouse has the largest score of recommendations, while John Buchan, Hugh Walpole, Ian Hay (who writes a preface to the catalogue), Edgar Wallace and "Sapper" also do well. It was said that one of the features of the Spanish War was the attempt at popular education in the Republican trenches; if men in the services get through even an appreciable fraction of these 1300 recommended books, Britain will emerge from the war as a far more educated nation.

1. Catalogue of Books for the Services. Selected by a Committee appointed by the Incorporated Society of Authors and the National Book Council. 1939. The National Book Council. 3*d*.

WE are asked by the Medical Research Council to point out that the pamphlet Blood Transfusion Outfit is not a publication in the ordinary sense and has not been placed on sale. It is merely a memorandum of instructions relating to the particular forms of apparatus for taking and giving blood which have been supplied to the four emergency blood-transfusion depôts in the home counties and to various hospitals in the London sectors, and has been printed for distribution to blood-transfusion officers.

ANNOTATIONS

BLOOD SUBSTITUTES

ALTHOUGH complete arrangements have been made for the storage of blood for emergency transfusion purposes, it would be valuable to have some substitute available which would withstand storage without deterioration for longer periods than whole blood. In cases of shock unaccompanied by much hæmorrhage—that is, in patients who show a high or rising hæmoglobin value—the transfusion fluid of choice is plasma. On another page Dr. Knott and Dr. Koerner mention the advantages of this material and refer, as was pointed out in an annotation on Oct. 14, to the fact that large quantities of group O are now available as the supernatant plasma from stored blood which has become too old for use. The only disadvantage of group O plasma is that it will agglutinate the cells of the three other groups, sometimes in high dilution. The experiments of Knott and Koerner indicate, as they mention in their conclusions, that the plasma should be tested against the recipient's cells before being injected. Another most unusual blood substitute is described in this issue by Mr. O'Shaughnessy, Dr. Mansell and Dr. Slome. This is a solution of hæmoglobin in Ringer's solution. If properly freed from stromata it is relatively non-toxic and possesses the double advantage of carrying oxygen and maintaining the blood osmotic-pressure. It is also easy to store for long periods. They give four case-records to illustrate the effects of a 5 per cent. solution. As this is equivalent to a hæmoglobin value on Haldane's scale of about 36 per cent. it is not a perfect substitute for whole blood in cases of hæmorrhage. Further, its effects are only transient. It would, however, be interesting to know whether a combination of the two materials, hæmoglobin and plasma, both of which will keep reasonably well, and both of which are available in large quantities, might not be a better substitute than either substance separately.

AGE OF PARENT AND SURVIVAL OF OFFSPRING

FERTILITY in females, it is well known, declines steeply with advancing age. There is some evidence that it also declines in males after the age of 25–29. These are quantitative changes, and it would be interesting to know whether there are qualitative changes too—is the survival power of the offspring affected by the ages of the parents? The difficulty is to obtain a measure of vitality that is not also affected by environmental factors. For instance, Yerushalmy,[1] analysing the statistics of over 82,000 births in New York State in 1936, found that the neonatal mortality-rates were generally high for young and for old fathers and low for fathers aged 25–34, the age of the mother being kept constant. To take an example, for mothers aged 20–24 the numbers of deaths in the first month of life were thirty-one per thousand live births when the father's age was also 20–24, twenty-five when he was aged 25–29, and thirty when he was 35 or over. This may imply, as Yerushalmy suggested, that age has some effect on the reproductive vitality of fathers, but it is also possible that married couples, both aged 20–24, differ in their social characteristics from couples in which the mother is 20–24 and the father 25–29. Social environment will certainly affect the survival power of the offspring and may obscure the issue. It is, however, probable that social environment has less effect upon the incidence of stillbirths than upon infant mortality. Using the figures of 1931–35 for the U.S. birth registration area, Yerushalmy has, therefore, calculated the stillbirth-rates recorded for parents of different ages.[2] He finds that the age of each parent is also independently correlated with this rate, relatively high figures are again apparent for young and old parents and low rates for the intermediate ages. The relationship is more distinct for young fathers than for young mothers, while in the old ages it is more pronounced for the mothers. It exists for infants of both sexes, and there seems to be a similar association between the age of parents and the incidence of premature births. These figures, therefore, give some support to his case for qualitative as well as quantitative changes in fertility in association with changes in the ages of the parents.

1. Yerushalmy, J., *Amer. J. Hyg.* 1938, **28**, 244; *Lancet* 1938, **2**, 1009.
2. Human Biology, 1939, **11**, 342.

TREATMENT OF BUCCAL LEUCOPLAKIA WITH ŒSTROGENS

THE value of œstrogenic treatment in senile vaginitis and leucoplakia of the vulva and vagina is well recognised by gynæcologists. In a recent paper two American clinicians[3] state that comparable benefits may be obtained by treating buccal leucoplakia with œstrogens. Thirty-eight patients were treated by them in this way after other methods used for adequate periods had failed. The methods which failed included abstinence from tobacco, proper dental hygiene and the treatment of syphilis if present. Œstrogenic treatment consisted in some cases of giving 10,000 rat units of œstradiol benzoate in 1 c.cm. of sesame oil by injection on alternate days for a week, together with the oral administration of tablets of alpha-œstradiol in daily doses varying from 0·17 to 1·0 mg. In other cases oral administration of alpha-œstradiol in the same doses was used alone, the treatment being continued for periods varying from 90 to 120 days. The tabulated results are as follows:—

	Number treated	Cured	Improved	Not improved
Women ..	25	11	11	3
Men	13	5	4	4

Improvement often appeared about one week after starting treatment by injection, and in four to six weeks when oral treatment alone was employed. In two men typical mastitis developed and regressed after the cessation of treatment. The authors suggest that buccal leucoplakia and similar lesions are associated with a deficiency or a disturbed metabolism of the sex-hormones in both women and men.

3. Nathanson, I. T., and Weisberger, D. B., *New Engl. J. Med.* 1939, **221**, 556.

SINUSITIS IN CHILDREN

NASAL sinusitis is not so uncommon in children as is generally supposed. The acute fulminating form with abscess formation is rare; the onset is usually insidious and the symptoms somewhat vague, being merely those of nasal obstruction and catarrh, so that the disease may readily be overlooked. The usual mistake is to ascribe the symptoms to enlarged tonsils and adenoids, and it is often only after their removal has failed to cure the catarrh that the presence of sinusitis is suspected. The principal features of the disease in children are well exemplified by Birdsall[4]

4. Birdsall, S. E., *J. Laryngol. Otol.* September, 1939, p. 549.

in an account of 80 patients treated at Paddington Green Children's Hospital. Only one of these cases was acute, and the average duration of symptoms when first seen was two and a half years. The commonest symptoms, in order of frequency, were nasal obstruction, cough and frequent colds; pain was relatively infrequent.

Half of the children with nasal obstruction had previously had their tonsils and adenoids removed. In all, 33 of the children had undergone tonsillectomy without benefit; indeed, the symptoms were often attributed by the parents to this operation, though they had probably existed before. This does not support the view sometimes held that the course of a child's sinusitis may be favourably influenced by removal of tonsils and adenoids. It is, on the contrary, an unfortunate error to perform this operation for symptoms due in fact to sinusitis. The diagnosis is largely inferential; transillumination is helpful when one antrum is affected, but radiographic examination is the most valuable means of diagnosis. Radiography, indeed, may be considered essential, though it was carried out in only 37 of Birdsall's 80 cases. In 35 of these 37 it showed the antra as the predominantly affected sinuses; in 22, other sinuses were also involved, but in no case was infection confined to the frontal or sphenoidal sinuses. Birdsall believes that recent sinusitis in children is, as a rule, readily cured by such simple measures as the application of ephedrine in saline solution and the removal of secretion by an alkaline nasal lotion. Presumably he has not encountered acute otitis as a complication of nasal syringing. Among his 80 patients 21 did not continue attendance; of the 59 remaining, 34 were cured by ephedrine replacements and drops, and 13 by these methods plus antral lavage. Operation was performed in 9 cases, and 2 by the Caldwell-Luc method; Birdsall considers this much the easier method in children and he thinks it involves no risk to the germs of the teeth if the opening is made immediately below the infraorbital foramen.

BILE PIGMENTS IN CHOLECYSTITIS

DUODENAL drainage has provided a means of diagnosis in gall-bladder disease which, in good hands, gives information of high value. Careful microscopical study of the bile so withdrawn is of great importance; bacteriological examination and observation of the volume and rate of flow may also help. Chemical studies of the concentration of bilirubin and urobilin have given interesting though sometimes conflicting results. Royer[1] has recently recorded further investigations which have led to conclusions of both physiological and clinical significance. In 25 normal subjects he confirmed that the concentration of bilirubin in gall-bladder bile is 2 to 12 times higher than in liver bile, due to absorption of water in the gall-bladder. Urobilin, on the other hand, is increased much less, and this is judged to be because this pigment is itself absorbed by the gall-bladder in considerable amounts. These results were confirmed by animal experiments. Between 3 and 10 per cent. of the bilirubin introduced into dogs' gall-bladders was absorbed; with urobilin, however, the absorption was approximately 50 per cent.

Royer reports the results of analyses of the bile pigments following biliary drainage in 70 patients suffering from cholecystitis, with and without calculi. In contrast with normal subjects, about half these patients showed a concentration of urobilin higher than that of bilirubin. This suggested that urobilin was being formed locally in the gall-bladder from bilirubin. It is well known that the change from bilirubin to urobilin is almost always caused by bacteria; hence the results probably indicate active biliary infection with cholecystitis. This view was confirmed by experiments on dogs, in which known proportions of the two pigments were introduced into the gall-bladder together with a small quantity of material from the calcium to cause infection. The urobilin increased, while the bilirubin fell. Such conclusions suggest that analysis of the bile pigments obtained by biliary drainage is a valuable method of investigation.

1. Royer, M., *Arch. intern. Med.* September, 1939, p. 445.

FAMILY DIETS IN THE WEST RIDING

"As the application of new medical and scientific knowledge is one of the main functions of the public health services it is also clearly their function to ascertain the facts about a matter of such fundamental importance to health as food consumption."

So writes Dr. T. N. V. Potts, county medical officer for the West Riding of Yorkshire, in his preface to a report which has put them into practice.[1] During 1935 investigators visited daily for a week the houses of 205 families in the West Riding and made exact studies of the amounts of different foods consumed. Families who coöperated in the survey comprised 27 working-class families in rural areas, 162 in urban areas, and 16 middle-class families from Ilkley, included for purposes of comparison. They had a relatively high proportion of young children. Mr. A. Bradford Hill, D.Sc., has analysed the figures obtained and has also compared the diets of these Yorkshire families with their estimated requirements as based upon the reports of the technical commission of the League of Nations.[2] By these standards the average supply of calories in the diet of all the families was adequate, but in the working-class families a greater proportion of them was derived from carbohydrates than in the higher income group from Ilkley. In the working-class group just under half of the total protein was of animal origin, while among the better off it rose to two-thirds. Less than half the amount of calcium suggested to be necessary by the League commission was consumed, while the amount of phosphorus was adequate only in the higher income group, the average intake for all the other families being only 63 per cent. of the standard. The consumption of iron was, on the whole, sufficient.

The average diet of the rural families was slightly superior to that of the urban families in protein, fat, carbohydrates and calories, and, in contrast to M'Gonigle's experience in Stockton-on-Tees, the families living on new housing estates were slightly but consistently better fed than their former neighbours. The unemployed families showed a greater deficiency in calcium and phosphorus than the employed, and their diets were also lacking in iron and protein. Deficiencies in the diet tended to increase as the number of children in the family increased. The better off families ate significantly more protein, fat, and minerals.

The consumption per head of cereals, sugar, and potatoes did not vary appreciably with the total amount of money spent on food, but the higher income groups spent more than the lower on fats and dairy produce, fruit and vegetables, fish and meat. Almost all the family diets included some fresh milk, but even

1. Report on a Study of the Diets of 205 Families in the West Riding of Yorkshire. 1939.
2. *Bull. Hlth Org. L.o.N.* 1938, 7, 461.

in rural areas nearly half of the poorer families used condensed milk as well. The average daily consumption of fresh milk was only a third of a pint per head, and though milk taken in schools was considered as part of the family diet the consumption fell as the number of children in the family rose. The survey will interest those who are now working out our rations, for it shows the relation, at various levels of expenditure, between the scientific optimum and the actual diet of the working class.

DIPHTHERIA ANTITOXIN

In his presidential address to the section of pathology of the Royal Academy of Medicine in Ireland, Dr. R. A. Q. O'Meara, while strongly supporting the use of diphtheria antitoxin, contrasted the results given by it in the hands of Martin and Chaillon in Paris in 1894 (a reduction in fatality from 30 to 12 per cent.), and in comparable groups of cases today most actively treated (fatality-rates of 11 to 17 per cent.). All depends, of course, on that little word "comparable," but O'Meara believes that it is justifiable to conclude that not only has there been no improvement in the treatment of the toxæmia of diphtheria but that modern antitoxin, unit for unit, is less potent than that originally employed. Too much attention has been paid, he suggests, to purification, to the avoidance of reactions and to the isolation of fractions for that purpose, and too little to studies of the clinical efficacy of antitoxin. The laboratory and the bedside worker have not worked sufficiently hand in hand. Further, in his view the work of Pasteur and the pioneers suggested that to get solid immunity it is necessary to use something very close to the whole organism and the modern tendency towards fractions may well lead to immunising methods being discredited. His plea for clinical trials is clearly highly relevant in this respect and should not be difficult to answer. It was supported by Prof. Bigger, who, though satisfied that antitoxin has definitely reduced the fatality-rate of both gravis and mitis infections, believed that the treatment has not improved to the extent which one would have expected after reading the results obtained by laboratories. On the other hand, it may be, as was suggested by certain speakers, that the antitoxin is no less potent than heretofore, but that the virulence of the organism has increased in certain areas. For instance, Dr. C. J. McSweeney, quoting observations from the Cork Street Fever Hospital, reported that the commercial antitoxin now used seems to check the spread of the membrane in gravis cases but has little, if any, effect on the undefined toxic factor which is responsible for the faucial œdema—"the hall-mark of toxic diphtheria" is the "bull neck." To combat such forms, reactions, he thought, have to be faced.

JOHN HOWARD

"I AM the plodder, who goes about to collect materials for men of genius to make use of." Thus John Howard [1] summarised nearly twenty years of arduous travel in England and abroad, investigating the state of the prisons of his time. Howard was born at Clapton in 1726. His early years were spent at Cardington near Bedford and later he attended, with no great distinction, a dissenting academy in London. He was interested in science, particularly meteorology, and was later elected a fellow of the Royal Society. After his father's death in 1742 he was left with ample means and spent much of his time travelling. He was twice happily married and finally settled on his estate at Cardington. In private life, Howard appears to have been something of a benevolent despot. He treated his tenants well, but they were expected to conform with his strict standards of conduct and religious observance. Likewise his second wife, fortunately a simple, pious woman, agreed that should any difference of opinion arise between them his should always be the final decision. He was a vegetarian and total abstainer and withstood great physical hardships with fortitude. During his visits to prisons he was often exposed to the infection of plague and gaol fever, but he took few precautions beyond abstaining from deep breathing, carrying a vial of vinegar, and trusting in Providence. When Howard was almost 50 he became high sheriff for Bedfordshire and his interest in the prisons began. He noticed that some prisoners could not pay the usual fee demanded by the gaoler and tipstaff and so, although they were acquitted at the assizes, they were taken back to prison. This led him to ride into several neighbouring counties to see if the same conditions existed there. He found the state of the prisons, where men and women, innocent and hardened, were herded together, appalling. Drinking and gambling, encouraged by the gaoler who supplied the liquor, were all too common and the prisons were hardly ever inspected by the authorities. In order to find some remedy for conditions at home, Howard travelled abroad and examined the prisons of many other countries. He also inspected bridewells and investigated the transportation system. He himself accomplished little in the way of prison reform, but he collected and published facts which aroused public opinion and paved the way for the work of such reformers as Bentham and Elizabeth Fry, and his interest in the prevention of gaol fever and plague helped in the development of the public health movement. While studying conditions in a military hospital in Russia Howard contracted camp fever and he died in January, 1790. But like another famous reformer his soul goes marching on, inspiring the Howard League for Penal Reform.

1. John Howard. Hospital and Prison Reformer. A bibliography. By Leona Baumgartner, M.D. Baltimore: The Johns Hopkins Press. 1939. Pp. 79. $1.

MEASLES AND WHOOPING-COUGH TO BE NOTIFIED

In America and some other countries the notification of measles and whooping-cough has been in force for years, and it is from these sources that our knowledge of the behaviour of these important endemic diseases is mainly derived. The practice of notification in this country is based on the belief, widely held in the last century, that the spread of infectious disease could be controlled by sanitary measures; notification was accordingly limited to diseases regarded as due to insanitary conditions. Today the control of epidemic disease is looked at differently and the object of notification has shifted from what the sanitary inspector can do with broom and candle to what the medical profession can do by applying our knowledge of immunology. Measles and whooping-cough, both of them frequent causes of avoidable death and severe physical impairments, offer great scope for attack by immunological means; but such progress can only be haphazard unless the distribution and epidemiological features of these diseases are known. Opposition to an extended list of notifiable diseases seems to have been due for the most part to a misunderstanding of the objects of notification and the uses to which it is put. Strictly speaking, infectious diseases are notified through the medical officer of

health to the local sanitary authority and the certificate (except in the case of tuberculosis) is an open document; in practice however notification is a private communication from a practitioner to the medical officer and is treated as confidential. All that is made public is the number of the various diseases notified. The action, if any, taken on the receipt of a notification is left to the discretion of the medical officer; it is more and more his custom to consult with the notifying practitioner before acting. As a local and temporary measure measles and whooping-cough have long been notifiable in various parts of the country. In now extending notification to the whole country the Minister of Health emphasises its ephemeral character. Many besides epidemiologists will have the faith to believe that it has come to stay.

TUBERCULOSIS IN WALES

IN Wales the campaign against consumption has had a divided leadership. The King Edward VII Welsh National Memorial Association has been responsible for the diagnosis and treatment of the patient and his relatives; the preventive work—apart from personal prophylaxis, such as sanitation, housing, and aftercare—has been the care of the local authorities. Obviously the clinical work of a tuberculosis service however expert will be of little avail unless the spread of infection is prevented with equal vigour. It was the suspicion that the contribution made by the local authorities was lagging behind that made by the association that prompted the request to the Minister of Health in September, 1937, to inquire into the working of the scheme as a whole, when it was found that the defects (and they were many) lay at the door of the local authorities. The story is fully and fairly set out by the association's principal medical officer in the 27th annual report which is before us. In his opinion the dual control has allowed the local authorities to make the easy assumption that *all* aspects of the anti-tuberculosis campaign come within the scope of the association. Contributory factors are the poverty of the principality as a whole and the disparity between the population and the resources of some of the authorities. The remedy lies in the pooling of administrative areas, aided by a grant from the central government, and in adequate staffing by whole-time health officers. The report contains much useful information: for instance, the number of new cases examined has gone up 9 per cent. since 1937 and is now nearly double what it was in 1928; the fact that 81 per cent. of patients who died of tubercle in 1938 had been referred to the association's officers is welcome evidence of coöperation with the body of general practitioners. Study of the report leads the reader to reflect that whatever deficiencies may exist in the public-health service of the principality the work of the memorial association at least is sound.

RADIATION FOR CERVICAL CARCINOMA

IT is now generally accepted that intracavitary radium combined with X-ray therapy is the method of choice in the treatment of cervical uterine cancer. Two recent papers give a valuable survey of technique, results and complications. Meigs and Jaffe [1] of Boston report a group of 70 cases, and A. Grossman [2] discusses his findings at the Michael Reese Hospital, Chicago. In the Boston Hospital the course of treatment begins with X rays. Four pelvic portals centred on the cervix are used, each field receiving a total of 1500 to 2000 r. measured in air—given in daily exposures of 300 to 400 r. to alternating fields so that each field is treated once in 4 days. Treatment is given at 200 kV. (peak voltage), 5-20 mA., filtration 0·5 copper and 1 aluminium, and focal skin distance 50 cm. At the end of approximately 18 days, radon is inserted into the cervical canal, in a small tube filtered with 1 mm. platinum for a dose of 1500 millicurie hours delivered in 5 hours. Four days later the treatment is repeated. Recently an attempt has been made to add to the dose by implanting needles of 2-10 mg. content into extensions of the tumour to the vaginal wall. Of 70 cases treated, 24 lived 5 years (34·4 per cent.). The European figures chosen for comparison are those of the Fondation Curie, Paris (46·8 per cent.) and of the Marie Curie Hospital, London (41·2 per cent.). All are relative, not absolute, cure-rates. The authors think that they failed to spread their dose far enough round the cervix. Yet, in spite of their low dosage, fibrosis of the uterus was a common cause of hydronephrosis, uræmia and death. The ureters were not sectioned and it is possible that constriction was due to recurrence in tissues altered by radiation.

Grossman describes a new technique for external radiation with the 4-gramme radium pack. Fields 8 by 10 c.cm. are used, and the radium is kept at 10 cm. from the skin. About 3000 mg. hours are administered daily to each of the two fields, a total daily dose of 6000 mg. hours. This continues to a total of 200,000 mg. hours. If the primary growth regresses satisfactorily, external treatment is interrupted to give intracavitary radium treatment. This is applied according to the technique of Regaud of the Fondation Curie, and the total dose is 7000 mg. hours in a total of 116 hours. The intracavitary dosage here is quite high and can be roughly estimated to be over 7000 r. (radium) on parametrium immediately adjacent to the cervix. It would be helpful to know the estimated dose on parametrium from the radium pack and also the results of this method of treatment.

CHRISTMAS AND THE DOCTOR

THIS year Christmas will find most of us less well off than we were a year ago. With the income-tax steadily going up and our incomes coming down, we look around for new ways of making both ends meet. Calls on our charity are naturally subjected to searching scrutiny before being answered—or we stifle better thoughts and drop them quickly and surreptitiously into the wastepaper basket. But there is one appeal with which our readers are familiar which must not fall on deaf ears. Each year for as long as most of us can remember, Sir Thomas Barlow has asked us to help less fortunate members of our profession and their relatives, and his words have met with a generous response. Once again in our correspondence column he repeats his now familiar words but with a variation. If we are hard-up, those for whom he appeals are worse hit still. For them a very small drop in income or a very small rise in price means all too often lack of the necessities, not to mention the simplest luxuries. We feel sure that he will not appeal to our readers in vain.

The next session of the General Medical Council will open at 10 A.M. on Tuesday, Nov. 28, under the presidency of Sir Norman Walker.

Sir John Pollock, M.B., has been elected rector of the University of Edinburgh.

1. Meigs, J. V., and Jaffe, H. L., *Surg. Gynec. Obstet.* 1939, **63**, 257.
2. Grossman, A., *Ibid*, 1939, **63**, 373.

SPECIAL ARTICLES

VENEREAL DISEASE

ITS PREVENTION AND TREATMENT ON ACTIVE SERVICE

BY E. T. BURKE, D.S.O., M.B. Glasg.
DIRECTOR OF L.C.C. (WHITECHAPEL) CLINIC

I HAVE recently returned from Ruritania, where I was afforded facilities for studying the measures which have been taken to deal with venereal diseases among the troops. The war between the kingdom of Ruritania and the republic of Totalitaria has now been in existence for just over two months. The Ruritanian expeditionary force of some 300,000 men is manning part of the frontier of her ally Gaul, facing the Totalitarian defences known as the Wotan Line. Ruritania, profiting by the experience of Great Britain during the war of 1914–18 regarding venereal disease, has instituted certain measures with the objects of both reducing the incidence of V.D. among the troops and minimising the loss of manpower caused by these diseases.

The situation which developed in the British army during the 1914–18 war—namely, that during these five years there were some 400,000 cases of V.D. among British troops—was fully appreciated by the Ruritanian government. They realised that such a state of affairs must have been a potent factor in increasing the amount of V.D. among the British civil population, and also that, from the military point of view, such a figure represents a tremendous loss of efficiency and fighting-power, an army of venereally infected men equivalent to 20 infantry divisions. In order to prevent a similar situation arising in their own army, the Ruritanian government brought into force various measures which were evolved after a careful study of those adopted by Great Britain.

The British practice was that when a soldier on active service was found to be suffering from V.D. he was evacuated from his unit to a special V.D. hospital at the base, where he remained until cured or judged to be non-infectious. It is a matter of common knowledge that a large number of men on home-leave, rather than again face the hazards of the front line, set themselves deliberately to acquire V.D., usually gonorrhœa. In large towns, certain prostitutes who knew themselves to be suffering from V.D. specialised in accosting soldiers and impressing the men with the fact that intercourse would result in acquiring a disease for which the infected soldier would be sent for treatment to the safety of the base. There were not a few instances where a man on leave, knowing of a male friend suffering from gonorrhœa, would inoculate his urethra by means of a matchstick with pus from his friend's urethral discharge. In other cases men, in order to avoid active service, freely indulged in promiscuity in the hope that they would acquire V.D. Many soldiers reported sick with V.D. while still in Great Britain, where they were admitted to hospital. By various means—causing a relapse, becoming reinfected and the like—they contrived to remain on the home front for the rest of the war. V.D. was, in short, regarded as the lesser of two evils.

The Ruritanian military authorities decided to institute exactly the reverse procedure—i.e., to treat all soldiers suffering from V.D. in the field. In order to carry this out a V.D. branch of the Ruritanian Army Medical Corps (R.A.M.C.) was created. An officer was appointed with the rank of colonel to be director of the V.D. branch. The R.A.M.C. applied to the Ministry of Hygiene for a venereologist of wide experience and high standing to be lent to the Army for the duration of the war. The Ministry selected the director of one of their large clinics and this officer—Colonel B. L. Ank—was appointed. He has direct access to the director-general of the R.A.M.C., and his duties are to organise the V.D. branch, to select the officers for it and to administer and be responsible for the whole scheme.

The basic principle of the scheme is that, except for unusual cases such as those complicated by the disease itself or by untoward effects of therapy, all patients suffering from early syphilis—i.e., up to the end of the secondary phase—acute anterior gonorrhœa, or soft sore, can and should be treated in the field and not be evacuated to a special hospital at the base.

During the 1914–18 war, the commanding officer of a British field ambulance on active service successfully treated a large number of men suffering from syphilis, gonorrhœa or soft sore. Thoroughly effective treatment was carried out at that time—23 years ago—without any difficulty. Being aware of this, the director of the V.D. branch realised that, with the modern more efficient remedial agents and greatly improved technique, fully adequate treatment is much more easily applied in the field now than it was then.

The idea upon which the Ruritanian scheme is based is that when troops know that treatment for V.D. takes place in the field and not at the base there will be much less incentive for men deliberately to acquire these diseases in order to reach a safe area.

The scheme provides that:

(*a*) Any soldier in a divisional, corps, or army area developing V.D. remains in that area for treatment.

(*b*) Any soldier on L. of C. developing V.D., if he belongs to L. of C. troops, remains on L. of C. for treatment; or, if he belongs to a divisional, corps or army area, he returns to that area for treatment.

(*c*) Any soldier at the base developing V.D., if he belongs to a unit on L. of C. or in a divisional, corps or army area, is returned for treatment to the area in which his unit is situated.

(*d*) Any soldier belonging to a base unit developing V.D. is treated at the base till non-infectious and is then transferred up the line to complete his treatment.

(*e*) Any soldier on leave in Ruritania from overseas who develops V.D. remains in Ruritania until he is non-infectious and is then returned overseas to complete his treatment with his unit.

(*f*) Any soldier serving in Ruritania who develops V.D. remains in Ruritania until he is non-infectious and then is transferred overseas as a reinforcement there to complete his treatment.

To carry out these principles, the following arrangements have been made:

(*a*) In each corps area (there are 3 divisions in a Ruritanian corps), attached to a hygiene company or a casualty clearing station, there is a V.D. section of the R.A.M.C., consisting of an officer with V.D. experience, an N.C.O. and 6 V.D. orderlies.

(*b*) In various areas along L. of C. similar V.D. sections are stationed and attached to C.C.S.'s or other medical units.

(*c*) At the base is a large V.D. hospital for the treatment of cases complicated by the disease or by the untoward effect of therapy, which have been sent down from the V.D. sections further up the line.

This hospital also treats uncomplicated cases arising locally, rendering them non-infectious prior to sending them up the line to complete their cure.

TREATMENT OF SYPHILIS

The concurrent-intermittent scheme is adopted. The arsphenamine preparations used are either (1) Stabilarsan which is already in solution in the ampoule and is thus drawn directly into the syringe without further preparation and without risk of oxidation or contamination, or (2) any of the "914" powder-preparations approved by the Ministry of Hygiene. The solvent for these latter preparations consists of a solution of sodium thiosulphate so ampouled that each contains 0·6 g. of the thiosulphate. The arsphenamine injections are given thrice weekly (say on Monday, Wednesday and Friday) in doses of 0·25, 0·30 and 0·45 g., making a total of 1·0 g. in each 7-day period. The bismuthial used is a lipo-soluble one, either (1) Neo-Cardyl or (2) Stabismol. These are given intramuscularly twice weekly (say on Tuesday and Saturday), each dose containing not less than 0·1 g. of elemental bismuth.

For all degrees of syphilis up to the end of the secondary phase, the schedule given in table I is adopted.

TABLE I

Week	Unit-course		Week	
	Arsphen. (g.)	Bismuth (g.)		
1	1·0	0·2	11 to 15	Patient returns to duty.
2	1·0	0·2	16 to 25	Repeat unit-course.
3	1·0	0·2	26 to 30	Patient returns to duty.
4	1·0	0·2	31 to 40	Repeat unit-course.
5	1·0	0·2	41 to 45	Patient returns to duty.
6	1·0	0·2	46 to 55	Repeat unit-course.
7	1·0	0·2		
8	1·0	0·2		
9	—	0·2	Serological tests every 3 months for 2 years.	
10	—	0·2		

The schedule covers a period of 55 weeks. During this time the man is absent from his unit for four periods of 10 weeks each, when he is present as an ambulant patient in the V.D. section in order to receive his injections. Being ambulant and being treated in the area where his unit is stationed, such a man would, in an emergency, be at once sent to rejoin his comrades in the line without exposing them to any danger of infection. Between treatment-periods there are three rest-intervals, each of 5 weeks, during which the patient returns to full duty with his unit.

The schedule is designed not merely to render the patient non-infectious, but to *cure* him. It represents full modern treatment and when carried through—even with certain modification—it yields a cure-rate of 100 per cent. It is of vital importance, particularly from the civil public health angle, that these men should really be cured and should not return to civil life, either on leave or at the termination of the war, capable of conveying infection to their marital partners and future children. It is only too probable that the short schedule of treatment adopted in the British army during the 1914–18 war, while rendering the man fit to return to duty, did not produce cure in some cases, with the result that the disease was conveyed to women and children. No man suffering from syphilis is allowed to proceed on leave until the scheduled treatment is completed and his serological reactions are negative.

TREATMENT OF GONORRHŒA

The routine adopted for gonorrhœa is set out in table II.

TABLE II

Week	M. & B. 693 (g. daily)	Posterior irrigation daily
1	3	Pot. permang. 1 : 8000
2	2	

If progress satisfactory—i.e., no urethral discharge and urine clear—stop treatment and in week 3 carry out daily observation for 3 days and then begin tests for cure.

If at the end of week 2 there is still some urethral discharge and/or if the urine is not yet clear, continue treatment for week 2 for a further 7 days.

Tests for cure.—If no evidence of vesiculo-prostatic infection:

Week	Procedure
4	Vesiculo-prostatic culture and prostatic bead.
5	
6	
7	Urethroscopy, sounds, rectal examination.
8	Gon. complement-fixation test.
9	Nil. Wassermann and Kahn tests.
10	Instillation $AgNO_3$ (posterior). Slides.
11	Nil.
12	Nil.
13	Vesiculo-prostatic culture. Prostatic bead. C.F.T.

The treatment of gonorrhœa by M. & B. 693 has shown that in all but very rare instances complete cure is achieved in 3 weeks. Testing for cure is important and is carried on over a period of 10 weeks. During this time, however, the patient returns to full duty but attends at the V.D. section once weekly for examination.

TREATMENT OF SOFT SORE

The routine adopted is shown in table III. Cases uncomplicated by suppurating bubo are, in the vast majority of instances, capable of resuming full duty at the end of the second week.

TABLE III

Week	M. & B. 693 (g. daily)
1	3
2	2

Beginning on the 1st day, Dmelcos curative vaccine is given intravenously on alternate days. The first dose is 1·0 c.cm. and each succeeding dose is increased by 0·5 c.cm. up to a maximum of 3·0 c.cm. Six injections in all are given, the last two being 3·0 c.cm. each.

Locally: Mild antiseptic dressings.

Each V.D. section is equipped for making a diagnosis microscopically. Serological and cultural examinations are carried out by the laboratory at the base V.D. hospital. Specimens for culture are taken at a C.C.S., which possesses an incubator, and these are investigated in a field laboratory.

PREVENTION

The following orders have been issued regarding prophylaxis by the director of the V.D. branch:

1. Medical officers in charge of troops will give talks to all ranks upon this subject at intervals of three months.
2. All drafts proceeding from Ruritania overseas shall, before embarkation, receive a leaflet upon the subject.
3. In talks and in leaflets, the first point emphasised is that the only certain way of avoiding V.D. is by abstaining from extra-marital sexual intercourse.

(During the war of 1914–18 the British found that there were many instances of men acquiring V.D. while on leave as the result of intercourse with their wives. These women had been infected by some man during their husbands' absence.)

4. No matter what may be the social standing of the woman involved, all extra-marital sexual intercourse is fraught with danger, and the only safe course is to regard any woman who consents to intercourse outside marriage as being capable of conveying V.D.

5. Any soldier who indulges in extra-marital sexual intercourse must report within 12 hours to a medical unit or to a medical inspection-room for preventive treatment.

6. Soldiers applying for prophylaxis are free to do so at *any* medical unit or medical inspection-room. There is no compulsion for a man to receive preventive treatment only at his own unit.

7. When preventive treatment is given, the soldier's number, name and rank must not be recorded. The only entry in the preventive treatment register is the serial number of the applicant and the name of his unit. If the coöperation of the troops is to be obtained, it is essential that the anonymity of those applying for prophylaxis should be preserved. The register is ruled as under:

Serial No.	Unit	Date and time of exposure	Date and time of prophylaxis	No. of hours' delay
137	7th Bn. Blankshire Rgt.	April 1, 1940 (10 P.M.)	April 2, 1940 9 A.M.	11
138	Nth A.A. Battery	April 1, 1940 (7.30 P.M.)	April 2, 1940 (10 A.M.)	14½

8. After preventive treatment has been given, the soldier is instructed to report sick immediately upon the appearance of any genital sore or urethral discharge. When he does so, he must tell the medical officer to whom he reports, when and where he received preventive treatment. The soldier will be sent to a V.D. section for diagnosis, and, in the event of venereal disease being discovered, the officer i/c of the V.D. section will check the man's statement by getting into touch with the unit where the preventive treatment is alleged to have been carried out.

9. All troops are warned that after extra-marital sexual intercourse it is compulsory for them to apply for preventive treatment. If V.D. develops after such treatment has been given no punishment will follow. If, on the other hand, a man develops V.D. and admits that he has not applied for preventive treatment, or alleges that he did apply for such treatment but on investigation is found not to have done so, a punishment will be awarded such as forfeiture of pay. Concealment of V.D. is to be severely punished by, for example, stoppage of pay and cancellation of leave for the time during which he is under treatment and observation.

10. Preventive treatment consists of the following measures carried out under the superintendence of a trained orderly:

(1) Patient urinates.

(2) Wash whole of external genitals thoroughly with hot soap-and-water for 5 min., during which time a thick lather should be obtained. This lather is to be thoroughly massaged into the penis, scrotum, pubis, perineum and adjacent parts of thighs. The prepuce must be retracted and its inner surface and the frænal region thoroughly cleansed. The whole area is then thoroughly dried.

(3) Irrigate anterior urethra with a 1 : 8000 solution of potassium permanganate.

(4) Instil into anterior urethra 4·0 c.cm. of a 10 per cent. solution of Argyrol. This is retained in the canal by the patient holding the meatus firmly closed between his forefinger and thumb.

(5) At 1-min. intervals a little of the injection is allowed to escape by the patient momentarily relaxing the pressure on the meatus.

(6) At the end of 5 min. the remainder of the injection is allowed to escape naturally—i.e., without applying massage or stripping to the urethra.

(7) The small quantity which remains in the urethra is retained there by applying a collodion seal to the meatus. The patient removes this seal when he wishes to micturate, which act should be deferred for 4 hours.

(8) The patient then massages thoroughly into all parts of the penis, scrotum, pubis, perineum and adjacent parts of the thighs from ½ to 1 drachm of the following ointment:

℞ Hydrarg. subchlor.	30·0 g.
Thymol.	2·5 g.
Paraffin. dur.	1·0 g.
Paraffin. mol. alb.	
Adeps. lan. hyd.	āā q.s. ad 100·0 g.

To avoid soiling the clothing, the genitals are enclosed in a paper covering. The areas to which the ointment has been applied are not to be washed for 3 days.

Experience of the results obtained by these measures shows their very high value in the prevention of gonorrhœa, soft sore and genital syphilis. Several cases have been encountered, however, in which although these measures were properly carried out syphilis subsequently developed, the primary chancre being an extra-genital one situated usually on the lip or finger. To prevent the extra-genital, especially the common labial, chancre recourse must be had to systemic prophylaxis. Preventive treatment by means of the oral ingestion of Acetarsol has been most successfully carried out at a large civil clinic upon a great number of patients applying for prophylaxis. Acetarsol is put up in tablets of 0·259 g. (gr. 4) each. For prophylactic purposes, the man is given fifteen tablets and he takes three per day for 5 successive days. The three tablets should be crushed up, dissolved in a cupful of water, and taken half-an-hour before breakfast.

Every soldier receiving prophylactic treatment is advised to have a serological test done after 3 and 6 months have elapsed.

SUMMARY

1. A suggested scheme for the prevention and treatment of V.D. among troops is presented for simplicity as if it were already adopted by a mythical Ruritanian army. The basis of the scheme is that it is more advantageous to treat V.D. cases in the field than in a base hospital; and that fully adequate modern treatment can be carried out in the area occupied by the army corps &c. to which the patient's unit belongs—the only cases evacuated to the base being those developing some complication.

2. Rapid and complete cure and not merely non-infectiousness is the goal to be aimed at.

3. The scheme includes a special V.D. branch of the medical service, directed by an officer who is a venereologist of high standing, with rank not lower than colonel. Attached to each army corps or similar formation there is a special V.D. section consisting of an officer, an N.C.O. and 6 orderlies specially trained in V.D. work.

4. A man on leave at home or overseas who develops V.D. is returned, as soon as he becomes non-infectious, to complete his treatment and tests for cure in the area in which his unit is serving.

5. The schedules of treatment for syphilis, gonorrhœa and soft sore described are designed to give fully adequate treatment resulting in permanent cure with the minimum absence from duty, the patient returning at once to his unit if an emergency arises.

6. Measures for the prevention of V.D. are set out in detail.

HEALTH IN INDUSTRY

In the period June 1938–39 reviewed in the nineteenth annual report[1] of the Industrial Health Research Board, the board's investigators have, as usual, been busy over a wide range of subjects. While subjective evidence favours the correction of small errors of refraction, particularly low degrees of hypermetropia, Mr. Graeme Talbot, F.R.C.S., and Mr. H. C. Weston have not been able to detect any significant improvement in the work performance of office and factory workers fitted with the necessary spectacles. Dr. P. M. T. Kerridge has measured the hearing acuity of weavers and beetlers in Lancashire, and finds that in these noisy occupations only a moderate degree of deafness is produced even after 20-30 years of work. Continuing their inquiries into the physiological problems of heating and ventilation, Drs. T. Bedford and C. G. Warner have been investigating the degree of air-change which takes place in rooms under ordinary conditions of occupation. Their observations range from old cottages to modern blocks of workmen's flats and should prove of considerable interest. The effects of incentives on human performance are being studied by workers both in the factory and the laboratory, and the important problems of "speeding-up" are not being overlooked. As well as continuing his work with Mr. E. G. Chambers on the accident-prone, Mr. E. Farmer is concerned with the vocational fitness for business of those who have had a university education, a question on which, in the absence of statistics, opinions no doubt differ. Much work is also being carried out on the vocational wishes and aptitudes of school-children and their vocational guidance, while industrial misfits unfortunately continue to provide plenty of material for study in the psychological field.

In the conclusion to their last annual report the board referred to the difficulty of making widely known such results of research work as are capable of application to practical needs in industry. They still believe that their reports are not being sufficiently read by those to whom they are primarily addressed, and they have therefore decided to summarise them as far as possible in popular language at the time of issue, and to seek further means of distributing them to the industries largely concerned. This is clearly a wise step with which war conditions should not be allowed to interfere.

SCOTLAND

(FROM OUR OWN CORRESPONDENT)

ROYAL FACULTY OF PHYSICIANS AND SURGEONS

Dr. J. Souttar McKendrick has been elected president of the Royal Faculty of Physicians and Surgeons of Glasgow in succession to Dr. John Henderson. Dr. McKendrick is a native of Edinburgh, but while he was still young he came to live in Glasgow with his father Prof. John G. McKendrick, who held the chair of physiology in Glasgow University. McKendrick was lecturer in practical physiology under his father and for eight years also lectured in medicine with the late Sir Thomas McCall Anderson. For almost forty years Dr. McKendrick has been connected with the Western Infirmary and for thirteen years he has been a manager. His professional life has been spent largely as a practitioner in the west end of Glasgow, but he has also acted on numerous hospital administrative boards.

1. H.M. Stationery Office. Pp. 34. 6d.

HOSPITAL SUPPLIES

An organisation which goes by the name of the hospital supply section of the W.V.S. is doing useful work in Edinburgh. At the headquarters 55 to 65 ladies put out an average of 3500 dressings per day. On Oct. 17, the day after the first air-raid in the Firth of Forth, in response to an S.O.S. from one of the first-aid posts of the city, 200 yards of gauze were cut and folded ready for use in under 2 hours. Within 3 weeks of the outbreak of war, extensive demands were made from the Eastern and Western General hospitals for various surgical supplies—500 surgeons' caps, 600 theatre gowns, 3000 towels of various kinds, and so on. These orders have been filled rapidly and it is hoped that soon all first-aid posts will be supplied with their requirements of cut-out garments and other material from the section headquarters.

NEW LORD RECTOR OF EDINBURGH

The students of Edinburgh University have elected Sir J. Donald Pollock as their new lord rector in succession to Sir Herbert Grierson. Sir Donald was rector's assessor during Sir Herbert's term of office. He is a graduate in medicine of the university. Although the total poll was disappointingly small the size of the majority gave convincing confidence of Sir Donald's popularity with the student body. For some years now he has taken great interest in student activities in Edinburgh and has given large sums to various university activities. He helped to get the common room at King's Buildings built, and it has been a great success. In addition he bought and presented to the university the old Bristo church for use as a small university hall for winter graduations and student activities. Sir Donald is a great supporter of the principle of a common union for both men and women and he thinks that all students should automatically become members of such a union on matriculation. The slogan used during the election campaign—"Vote for Pollock, the working rector"—gives a good indication of what the students expect from a man who has taken such interest in their affairs.

SWEDEN

(FROM OUR OWN CORRESPONDENT)

AIR AMBULANCE SERVICES

The history of air ambulance services since the Swedish Red Cross started them in 1924, according to Surgeon-General Fritz Bauer in the society's magazine, is one of mounting expenditure and of aeroplanes which crashed. Lives were lost in three accidents, in one of which, in the autumn of 1938, all the occupants of the aeroplane—pilot, mechanic, patient, doctor and nurse—were killed when it crashed in a fog into a mountain. There is no suggestion that these disasters should deter the Red Cross and the army from further developing this activity, for the service's achievements more than outweigh its disasters. Between June 1924 and May 1939, 1431 patients were transported 402,151 km. by Red Cross and army aeroplanes, and a further 100 patients were carried in private aeroplanes. Among these were 218 cases of infectious disease or blood-poisoning, 480 of acute gastro-intestinal disease, 92 of acute inflammation of the lungs, 15 of acute mental disease, 160 gynæcological or maternity cases, and 322 cases of accident. It says much for the courage and enterprise of the

pilots confronted by fogs and snow-storms, and the prospect of finding no suitable place in which to alight, that the calls for their services were responded to in over 93 per cent. of all recent calls. The most difficult time of the year for ambulance flights is in the spring and autumn, when ice may interfere with other modes of transport while not reaching the 20 cm. thickness needed to bear the weight of an aeroplane. It is this consideration which is making constructors keep their ambulance aeroplanes as light as possible.

DENMARK

(FROM AN OCCASIONAL CORRESPONDENT)

RISING TIDE OF HOSPITAL TREATMENT

ONLY a generation or two ago the Dane died in his bed at home. Now, particularly if he lives in Copenhagen, he dies in hospital. Apart from such an ultimate event as death, the Dane spends much more of his life between birth and death in hospital than he used to do. To these generalities Dr. Povl Heiberg has recently tried to give statistical precision in a study dating back to 1881 and carried down to 1935. To avoid the inaccuracy of minor fluctuations, he has dealt in five-year periods, the first of which was 1881–85, the last, 1931–35. In the first only 29 per cent. of all the deaths in Copenhagen occurred in its hospitals, whereas in the period 1931–35, the percentage was 67. It has been calculated that about 5 per cent. of all the deaths are now due to accidents and suicides, events rare both in the home and in the hospital. So, when both violent deaths and hospital deaths are eliminated, the deaths at home account for only about a quarter of the mortality in Copenhagen at the present time.

It might have been thought that the hospital fashion was universal, and that whatever the disease a rise in the frequency of hospital treatment for it would be demonstrable. True enough, for such diseases as typhoid, diphtheria, scarlet fever, rheumatic fever, lobar pneumonia and pulmonary tuberculosis, the proportion of cases treated in hospital, and the proportion of deaths from these diseases in hospital has risen enormously; in the case of pulmonary tuberculosis from 28 per cent. in 1896–1900 to 75 per cent. in 1931–35. But such a disease as scabies shows a reversed tendency, thanks to the improved efficiency of ambulant treatment. Syphilis and gonorrhœa also are less often treated in hospital than they were at the beginning of this century: indeed, 23 per cent. of all the notified cases of gonorrhœa were given hospital treatment 1906–10, whereas in the five-year period ending 1935, the figure was only 7 per cent.

THE FUTURE OF GONORRHŒA

A report, whose cheerful note is substantiated by imposing figures, from the Rudolph Bergh Hospital in Copenhagen, gives the impression that gonorrhœa will shortly be of historical rather than contemporary interest. In *Nordisk Medicin* for Sept. 11, Dr. Aage Kristjansen discusses his experiences of Streptamid (sulphanilamide) and M. & B. 693 in several hundred cases of gonorrhœa. He began with sulphanilamide in the autumn of 1937, but at the end of 1938 switched over to M. & B. 693, which he finds more potent and less liable to cause complications. At the Rudolph Bergh Hospital it has proved capable of curing gonorrhœa rapidly and effectively in about 97 per cent., and this result can be achieved in recent cases of the disease by a week's course of tablets whose administration does not entail resident treatment in hospital. Dr. Kristjansen notes than in 1930 59 per cent. of the 180 beds in the Rudolph Bergh Hospital were required for cases of venereal disease; in 1936, thanks largely to advances in the treatment of syphilis, this proportion was reduced to 42 per cent; in 1938 it fell again to 29 per cent.; and when he presented his report to the Danish Medical Society last month only 10 per cent. of all the beds of his hospital were being used for venereal disease. Evidence in the same sense is to be found in the notifications of new cases of gonorrhœa in Copenhagen. Dr. Kristjansen refers to encouraging experiences with the treatment of soft sore and lymphogranuloma inguinale with this new group of drugs; and he concludes with a prophetic flourish, saying that "with salvarsan, bismuth and suphanilamide, the venereologist of today may with confidence look forward to the time when venereal disease will be defeated as a social scourge, and he will himself be rendered almost superfluous."

DENMARK'S DIETETIC DILEMMAS

Something between Cassandra and Joan of Arc, Dr. Johanne Christiansen continues to warn her fellow-countrymen of the evils of their dietetic ways. Readers of her article in THE LANCET in February of last year, and the correspondence that followed, will recall that she has raised her standard against the teaching of Dr. Hindhede, whose advocacy of vegetarianism made a deep impression on Danish larders a generation ago. Indeed, she has lately produced in Germany a study entitled "Mein Kampf gegen Hindhede."

Dr. Christiansen's crusade is against margarine, bacon, sugar and flour, and on behalf of milk, eggs, cheese, meat, fish, fruit and vegetables. The picture she paints of the margarine-fed, obese and constipated Dane may be striking but is certainly not pleasing to the eye. Obesity, she says, is the diagnosis of about 10 per cent. of all the patients in certain Danish hospitals. The misleading—this in reference to Dr. Hindhede—teaching that animal food is harmful has scared the Danes into shunning milk and meat, and distending themselves with fats, flour and sugar. As for hospital diets in the past, Dr. Christiansen holds their vitamin-deficiency up to scorn. She would like to see the farinaceous slops of the discredited and discreditable past giving place to milk and meat soups, the latter as an excellent vehicle for the vegetables she values so highly.

NEW ZEALAND

(FROM OUR OWN CORRESPONDENT)

THE OUTBREAK OF WAR

"Certain bankrupt islands in the South Pacific" having declared war on Germany, as one of the German broadcasts in English puts it, most medical men in New Zealand have had their routine disturbed to a greater or lesser extent. The civil Organisation for National Security had previously been created, and medical boards were ready in all centres to carry out the examination of recruits for the volunteer force. This work has mostly been done. Colonel F. T. Bowerbank of Wellington has been gazetted D.G.M.S. with Lieut.-Colonel Ivan Wilson as his assistant at army headquarters. The three A.D.M.S.s in the northern, central and southern commands are Lieut.-Colonel H. S. Kenrick, Lieut.-Colonel W. H. B. Bull and Lieut.-Colonel A. C. McKillop. Of the division which the Dominion is planning to train, the first

brigade group is already in camp, and the second likely to go in November. Apart from the medical officers attached to the units, the field ambulance of the first brigade group is commanded by Lieut.-Colonel J. H. Will and Major A. A. Tennent. Proposals for the safeguarding of the practices and appointments of men engaging in military service are under consideration by the B.M.A. The government has not yet indicated whether M.O.s on service will be given a professional allowance in addition to their pay of rank, as was done in 1914–18. Uncertainty on this point is believed to be responsible for some delay in the volunteering of medical men.

ROYAL AUSTRALASIAN COLLEGE OF SURGEONS

This is the only official organisation specifically of surgeons in Australia and New Zealand, and the dominion section is the authority for New Zealand. Meetings of the fellows in the four centres take place from time to time for clinical and operation sessions, and there is an annual two-day meeting of all N.Z. fellows held in the centres by rotation. This year it was held in Dunedin and on Aug. 30 there was a discussion on gastro-jejunal ulceration. Sir Louis Barnett, emeritus professor of surgery in the University of Otago, who has resigned from the chairmanship of the N.Z. section, had been chairman since the inauguration of the college (1928), and had for the last year been its president. He will continue in charge of the college's hydatid registry, which now includes records of 1400 cases and is a valuable source of material for clinical study. His own contributions to the literature of hydatid disease, and his efforts on behalf of its prevention, still continue. Mr. F. Gordon Bell, professor of surgery at Otago, was elected dominion chairman in succession to Sir Louis Barnett.

MATERNITY SERVICES

National Health insurance has receded as an active issue in N.Z. politics for the present, but in the session of Parliament just concluded an amendment to the Social Security Bill was passed, dealing with maternity services. Since the contemporary situation was described in these columns on Aug. 12 (p. 388) alternative contracts between the Minister and doctors were prepared, provisionally approved by the government, and also approved by a majority of the profession in a secret ballot. These proposals have now been embodied in the Act, and will shortly come into force, though certain definitions, and details such as rates of remuneration, remain to be fixed. The new proposals briefly substitute a more elastic arrangement for the former contract. The doctor is to be paid the statutory fees by the Social Security Department simply on the production of evidence of having attended the case. Further improvements are seen in the provision of additional fees for complications such as hyperemesis, eclampsia and hæmorrhage. Provision is also made for the payment of anæsthetist and consultant when necessary, and for mileage fees.

There is still no sign that the general practitioner part of the national service is to be started. Negotiations between hospital boards and their (hitherto) honorary staffs are in progress with a view to payment of these staffs for their part-time work in the hospitals.

THE NEW ENDOCRINOLOGY

Concluding article by Prof. E. C. DODDS, F.R.C.P., *director of the Courtauld institute of biochemistry at the Middlesex Hospital, based on lectures delivered at the British Postgraduate Medical School*

VII—THE SUPRARENAL

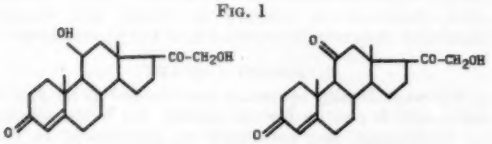
THE suprarenal has always presented great interest to the physician, the physiologist and the anatomist. It was one of the organs for which the conception of an external duct was abandoned last of all. Until a hundred years ago prizes were frequently awarded to anatomists who could demonstrate the duct of the suprarenal, and it is surprising to note how relatively recently awards were made for a successful attempt. By the middle of the last century anatomists reluctantly recognised that there was no duct, and the gland was therefore a complete mystery.

Its entry into pathology is so well known that very little need be said here. It will be remembered that Addison demonstrated the relationship between lesions of the gland and the syndrome that now bears his name, and in 1895 Oliver and Schafer demonstrated the pressor effects of extracts of the suprarenal. This was rapidly followed by the isolation of adrenaline, in crystalline form, and finally by the synthesis of this substance. Despite these pressor effects, however, careful trials demonstrated that it had no action whatsoever on the progress of Addison's disease. A long and elaborate series of animal experiments had further demonstrated that complete bilateral adrenalectomy was always followed by the death of the animal, and by the year 1910 it was fully realised that the suprarenal tissue is essential to life. From the fact that adrenaline will not prolong the lives of bilaterally adrenalectomised animals it follows that the gland must produce another internal secretion. On morphological and histochemical grounds the suprarenal gland can be separated into two component parts, the medulla, responsible for the production of adrenaline, and the cortex, responsible presumably for the production of the hormone which is essential to life.

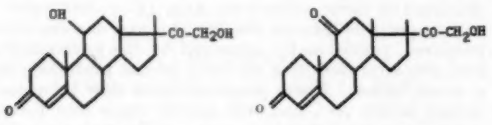
The search for the active principle continued without success until 1931. One of the great difficulties lay in the provision of an adequate method of testing. The completely adrenalectomised cat or dog dies within some three or four weeks, and the illness is characterised by great lassitude, muscular weakness and a rise in the non-protein nitrogenous constituents of the blood. Death occurs with respiratory failure. The ability to keep such animals alive would of course form a very good test; yet it can at once be seen that such a reaction could not be used for quantitative assessments, and at the same time it would be impossible to test a large number of substances. Various other methods have been employed, such as studying the rapidity of onset of muscular fatigue in adrenalectomised rats. This is the method in common use today, and it is known as the Everse-de Fremery test.

The first successful demonstration that a stable active hormone could be obtained from the suprarenal cortex was made by Swingle and Pfiffner in 1931. Their preparation was obtained by extracting the glands with volatile solvents and precipitating various fractions with lead. There is no point in giving the details of this technique since the method is now of historical interest only. Their substance was standardised by its power to maintain the life of adrenalectomised cats. A great deal of further work was done by a large number of investigators:

FIG. 1



A—Corticosterone B—Dehydro-corticosterone



C—17-hydroxy-corticosterone D—17-hydroxy-dehydro-corticosterone

thus Stewart and Rogoff, Hartman and later Kendall obtained extracts of varying degrees of purity and activity. Kendall isolated a series of substances in crystalline form, but these proved for the most part to be inactive. The final clearing-up of the constitution of the hormone is due very largely to T. Reichstein. By extracting very large quantities he was able to show that the active principle was of a steroid nature, and was ketonic in properties. By the use of Girard's reagent, which it will be remembered is capable of application to the isolation of organic ketones, Reichstein was able to prepare a whole series of substances and to determine their constitution. Fig. 1 shows the constitution of some of the substances obtained. Compounds A and B are more active than C and D. From a study of the relative activity of the crystalline compounds and the crude tissue, it would appear that there must be substances of a greater activity present in the gland. It seems that a large number of substances capable of maintaining life are produced by the gland.

In view of the extreme difficulty of obtaining adequate quantities of this substance from natural sources, a synthesis has been attempted. As I pointed out in an earlier article, the complete chemical synthesis of the cyclopentenophenanthrene nucleus with its correct spatial orientations has not yet been possible. Reichstein has devised a degradation synthesis from sterols of the same type as that employed for the production of progesterone, androsterone and testosterone. Starting with either cholesterol or stigmasterol, 3-hydroxy-ætio-cholenic acid is produced. This by a series of changes shown in fig. 2 can be completed to desoxy-corticosterone. This differs from the naturally occurring corticosterone solely in the fact that it does not contain the hydroxyl group in the 11th position. Biological tests show that this substance is more active than the naturally occurring hormone. Recently the substance has actually been isolated from the gland. Hydrogenation of the double-bond causes the almost complete disappearance of activity, whilst the removal of the hydroxyl group in the 21st position results in the formation of progesterone. This, however, is without action from the cortine point of view.

Another substance isolated from the gland is andrenosterone, with the formula shown in fig. 3. This was found to be inactive from the cortine point of view, but is androgenic and is one of the substances excreted in the urine in cases of adrenal tumour.

BIOLOGICAL CONSIDERATION OF THE CORTICAL HORMONE

Even before the isolation of corticosterone and the availability of quantities of desoxy-corticosterone for biological experiments, physiological and pathological considerations of the adrenalectomised animal claimed attention. Some of the most striking observations were made by F. Verzár, who remarked on the similarity of the condition of adrenalectomised animals to that of animals poisoned by iodo-acetic acid. He produced evidence that in both these conditions there was an inhibition of the process of phosphorilation. This affects mainly the carbohydrate metabolism and the metabolism in the absorption of fats. Thus it was shown that in animals poisoned with phosphorus no fat was deposited in the liver if the animal had been previously adrenalectomised or alternatively poisoned with iodo-acetic acid. It is well known that proper absorption of the metabolism of fat cannot take place unless phosphorilation has occurred. Verzár also suggested that the hypoglycæmia in adrenalectomised animals was due to lack of phosphorilation of carbohydrates, also an essential part of their metabolism.

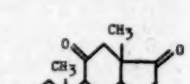


FIG. 3—Andrenosterone

This subject has also been studied by C. Jimenez-Diaz, who maintains that the cortical hormone has a direct action on the kidney and that the ammonia-forming powers become rapidly diminished in the adrenalectomised animal. At the same time he finds a decrease in the phosphatase activity of the kidney, and links these two factors together. Diminution in the ammonia-forming powers of the kidney leads to acidosis and an increase in the excretion of sodium, and therefore Jimenez-Diaz ascribes the well-known beneficial action of sodium chloride in Addison's

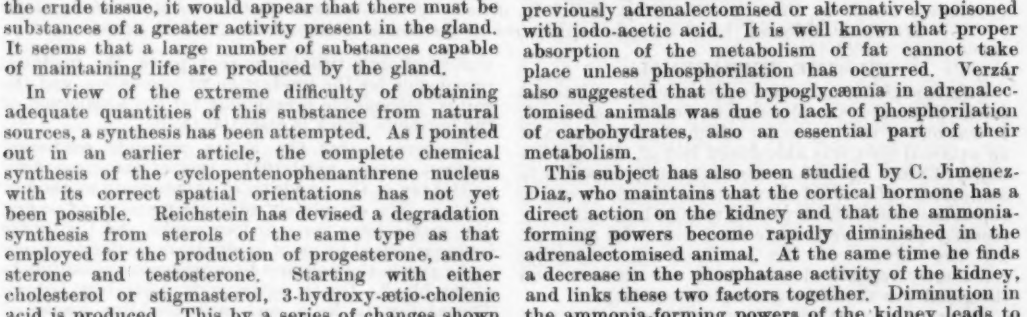


FIG. 2.—Degradation from stigmasterol

disease and on the adrenalectomised animal to this mechanism. It will be remembered that the symptoms of Addison's disease may be considerably ameliorated by giving large quantities of sodium chloride by mouth, and the same also applies to the condition of the adrenalectomised animal. Animals adrenalectomised early in life fail to grow, and it has been suggested by Verzár that this is through a lack of phosphorilation of the flavines together with lactoflavine or vitamin B_2.

GRAINS AND SCRUPLES

Under this heading appear week by week the unfettered thoughts of doctors in various occupations. Each contributor is responsible for the section for a month; his name can be seen later in the half-yearly index

FROM RECHAUFFEUR

III

THE last war in the Royal Navy shows up in retrospect in pleasant colours, since one forgets those periods of waiting, which seem inevitably to be associated with war. Someone aptly described it as "a long-drawn-out period of intense boredom, punctuated by moments of acute fright." A year or two back, one's memories had an air of unreality, but now we are again in a topsy-turvy world. The great difference between the start of the last war and this was, I think, our attitude of mind beforehand. This time we were all prepared for European trouble, whereas in 1914 we were most of us taken unawares in the midst of our peaceful occupations. My own was, I remember, a Yorkshire tennis tournament. In a few days we found ourselves in a new world. I shall certainly never forget my first morning in a light cruiser in the North Sea—two hours spent on deck in a tremendously steep sea, which left one no time to do anything but try and stand upright. Then at lunch-time nothing could be induced to stay on the table. However, seas were not always rough, there was the mail when one got into harbour, shore-leave from time to time, deck hockey on board, and even occasional cricket matches on shore. And if one had to live cheek by jowl with someone, a better company could not be imagined.

The absence of newspapers at sea was inadequately compensated for by a weird missive, named "Poldhu," after the transmitting station, written out in the wireless cabin. It contained abbreviated accounts of attacks and counter-attacks in France or Gallipoli, so similar to each other, that if today's Poldhu failed to turn up, yesterday's was equally interesting and sufficient to check breakfast conversation. At the outset of the war most ships got rid of their inflammable furniture very quickly; but as it was slowly realised that the expected fleet-action was going to be postponed indefinitely, it had to be replaced by a new lot.

In a fighting ship a doctor was treated with quite a lot of consideration, partly because he was only a "trumpery" surgeon as the ratings translated "temporary," and partly because one came from that queer place the "beach," a sufficient cover for any eccentricity. But whether those four years were spent in hospital ships or fighting ships, and we most of us had experience of both, the sea cast a wonderful pellucid covering over them.

* * *

The character of the executive officers of the Royal Navy is unique. They share with all genuine sailors the simplicity of outlook which comes to those who have to deal with natural elements; for the wind cannot be bluffed and storms are incalculable. These men have a glamour which is all their own, especially, I am tempted to think, if they have been through Dartmouth at the start. There is a singleness of spirit, a lack of competitive feeling, an absence of snobbery—moral, social, or intellectual—and a will to companionship (after breakfast) which, being unconscious, has a most exhilarating effect on outsiders. Even routine in wartime could not stale the infinite variety of the N.O. He took as great a delight, apparently, in our strange language as we did in his; to hear a gangway called a ladder or a cabin a room excited his friendly derision. The royal naval officer offers a standard in the psychology of the eminently sane which seems to elude even the elaborate classification of Jung. Extrovert he predominantly is, but he has, too, the sublime detachment of the introvert, and much more besides; if his standard could be extended to all the world, there would be precious little need of introspection.

The naval officer invites coöperation from the outset, whatever his seniority. A colleague of my own got himself into a minor scrape because he was too willing to oblige a vice-admiral. An inspection of a battleship was to take place and every rating was in his correct division. But one stoker with a temperature of 103° had perforce to be kept in the sick-bay in bed. When the procession of admiral, captain, commander and fleet-surgeon arrived to inspect the sick-bay, the admiral sympathetically but brusquely inquired of the man what was his trouble. "I got bronchitis, sir," answered the man. "How did he get that?" asked the admiral, turning to my friend the "trumpery" surgeon. My friend, who had no idea of the cause of the illness, helpfully suggested that the man had got a wetting. "And how did you get *that*?" said the admiral. "I never got no wetting, sir," replied the man, to which the unfortunate surgeon, completely taken aback but still hoping to make the inspection a success, could only suggest that the man "had got wet in his bath." The informal conference on the spot exonerated my friend on the plea that he was after all only a stranger from "the beach."

* * *

Occasionally, officiousness invades the medical branch of the Royal Navy just as it does the other services. A good example of this occurred in a hospital ship when a rating was suspected of swinging the lead. He complained of a small varicose vein and was instructed to stand to attention with his trousers lowered around his ankles for inspection of the alleged vein. The fleet-surgeon had made up his mind in a few moments that the man needed a "ticking off" and severely asked him how long he had been in the navy. "Six years, sir," was the reply. "Then," said the fleet-surgeon majestically looking him up and down to find a fault, "you have been in the service long enough to have learnt that when speaking to an officer you should have the buttons of your coat done up."

* * *

Seasickness is quite a common enemy of the hardiest naval officer, and I never saw any effort made to treat

it. Some of us got over it quite easily by the simple expedient of filling the stomach as full as possible with, say, suet pudding and getting up on deck with our faces into the wind. With the acquisition of sea-legs, seasickness may disappear.

It was very humiliating when after the war I found myself succumbing to seasickness in quite a small swell crossing the Adriatic on a cruise to Greece. We landed at Split on the Dalmatian coast, and were informally taken in tow by a stranger who gave us his name—Count Pawlow. Later in the day he met us again and very hospitably asked us to his house before we went on board. My surprise was considerable to see on the walls photographs of an Oxford college rowing eight, and in the bookshelves Osler's Medicine and Rose and Carless' Surgery. They belonged to the Count's son-in-law, who, after being wounded early in the Serbian wars, had been sent to England to complete his education; he then entered the Jugo-Slav army as a medical officer. Later in the evening he came in to join the party and turned out to have been at my own hospital.

The Hellenic cruises are well worth consideration by doctors. I went as ship's surgeon, getting the trip free in return for my services. I suppose I might have been kept on board for days by some unexpected illness, but actually I was never prevented from going ashore on the many expeditions we made day after day from the small Italian ship which was our floating hotel. We went to Knossos in Crete and to all the most famous places in ancient Greece, as well as to three lovely sea towns on the recently liberated Dalmatian coast. We made many friends, heard many excellent lectures and, after these, usually managed to get some dancing or bridge. I still hope to go again, when the North Sea, not to mention the Mediterranean, has returned to the ways of peace.

LETTERS TO THE EDITOR

A CHRISTMAS APPEAL

SIR,—Many members of the profession have most generously supported the appeal made each year for donations towards the Christmas gift fund of the Royal Medical Benevolent Fund. In the years of peace this special work of ours in bringing extra comfort and pleasures on Christmas Day into the homes of old people, directly connected with our profession, has obviously appealed to the hearts and sympathy of many of your readers. In this year of war, may I through you, Sir, ask the question—is the Fund to give its usual gift at Christmas, 1939, or are those old people to receive nothing at a time when they may be suffering from greater privations and difficulties?

I am very confident that the reply will be that this is not the year to withhold the gift which means so much happiness and brings such pleasure to many old and infirm people. I invite those who can contribute to send donations to the Royal Medical Benevolent Fund, Christmas Gift Account, Wormingford, Essex. Although many members of our profession have been hard hit, yet I have every hope that the response will be a generous one.

I am, Sir, yours faithfully,

THOMAS BARLOW,
President.

Nov. 13.

EVACUATION PROBLEMS

SIR,—The press reports of the debate on evacuation, initiated on Nov. 1 by the Bishop of Winchester have been necessarily condensed, and we doubt whether Viscount Dawson's speech (of which your parliamentary correspondent gave the headings) has received the attention it deserved. With your permission, we will refer to and expand some of his arguments.

We suppose that few members of our profession rail at the Government because preparations were made to mitigate the horrors of mass murder from the air. Householders who have taken out fire and burglary policies do not usually write rude letters to insurance offices because another year has passed without a fire or a burglary. But householders paying heavy premiums do from time to time consider whether their (or their parents') estimates of the worth of family pictures attributed to old masters are likely to be confirmed by an expert valuer. Lord Dawson invited his fellow peers to consider the premiums of our assurance policy against threatened general slaughter. All his arguments deserve study but we shall refer to two only, a psychological and an epidemiological argument.

Much was said in the debate respecting the unwillingness of wives to remain away from their husbands. Lord Dawson reminded his hearers of a "fundamental instinct of human nature on which the family life is founded, and that is the homing instinct." We think our psychological colleagues would expand this and tell us that a rupture of the family life of young married people which may be continued for years is a very serious matter. It is a psycho-pathological process which, even if the number of individuals affected is small, may seriously weaken the morale of a community. Infection is at least as important in psychology as in physiology. Here is a psychological problem.

Lord Dawson passed to an epidemiological problem. "We must remember," he said, "that there is a great deal of overcrowding. You get an outbreak of severe influenza in one of these overcrowded communities in the reception areas and you have a terrible problem, very easily, right at your very door."

The deaths from accident on the roads in September and October due to blackouts made one item of our insurance premium; one wonders whether droplet infection in cottages, overcrowded vehicles and shelters may not add another item between now and May. It may be that the coincidence in time of the greatest war and the greatest pestilence (that of 1918) since 1348-9 was a pure coincidence; the mortality was not confined to belligerent nations. But it may be, as some epidemiologists think, that the crowding together of young people in the trenches and munition factories (not restricted to belligerent nations) had some share in the exaltation of virulence of the virus.

If emotional tension can be maintained, might an enemy be subtle enough to induce (by, for instance, numerically small sacrifices of aircraft and relatively few direct murders), day after day, great congestion in shelters and other places of relative safety, and thus bring about suitable conditions for epidemic explosions?

It may be said truly that these are academic questions (the influenzas of 1918–19 accounted for more than 150,000 deaths in England and Wales alone). The deterioration of morale, even death itself with an unbroken body, are not emotionally so horrible as the thought of burning buildings collapsing upon

women and children. We would not advocate the diversion of a single medical or technical officer from the effective service of civilian defence. But we submit that problems such as these deserve the serious consideration of some professional group which, while not burdened with the responsibility of executive control, has weight with the public.

We, as fellows of the Royal College of Physicians, naturally think of the college in that connexion, but in the first place the subject should be considered by the medical profession as a whole. Our object has been to call attention to what seem to us very serious problems. We are, Sir, yours faithfully,

E. GRAHAM-LITTLE.

Nov. 13. MAJOR GREENWOOD.

WOMEN AND SPORT

SIR,—Your annotation on Women and Sport makes reference to investigations by a subcommittee (of which I was chairman) appointed by the National Fitness Council, the activities of which are interrupted but not, we hope, terminated at present. The details described in your annotation are so accurate that I assume they must have been inspired by some official pronouncement for which I myself am not responsible. Yet although any absolute conclusions are premature, I welcome an opportunity for publicity since nobody can say when a more considered judgment will be possible. Your annotator states that the Committee tried to obtain adverse criticism on violent exercise for women and girls, but up to the present without success. Taking this *au pied de la lettre*, I can imagine censure from the would-be impartial. We must admit that in this country there is a deeply rooted traditional opposition to violent exercise for women. Such opposition may be on physical, physiological, psychological or merely æsthetic grounds; and contrary evidence has little effect on prejudice. On the other hand, the small minority who practise or praise highly competitive sports will have difficulty in believing that they could receive a fair trial and decision. I believe we did our best in the circumstances; and if any of us were biased by preconceptions we nevertheless tried to assess judicially all the available evidence.

Among details which demanded investigations were dysmenorrhœa—was it aggravated or alleviated by exercise?—fertility, pregnancy, parturition, and sundry gynæcological details. On the psychological side, we asked ourselves if athletic competitions tend to produce a virile aggressive type of woman or if it is merely that the virile type is instinctively attracted towards such feats. We interviewed women who were prominent in the world of sport as active participants or as holders of official positions—runners, jumpers, oarswomen, swimmers, gymnasts, hockey, lacrosse and lawn tennis players from girlhood into adult life. The athletic investigation included the distribution of a questionnaire to a large number of present and past participants and to a smaller number who had married and from whom details about childbearing were obtained. Not a single example was forthcoming in which disadvantages of violent exercise were admitted or advanced. Many asserted that so far from dysmenorrhœa being made worse, obvious improvement in this symptom occurred. There was no suggestion of relative sterility, of troublesome pregnancies or of difficulties in delivery. It may be objected that all our subjects were enthusiasts unlikely to give any adverse evidence, but what other subjects could be selected as material for such an inquiry?

I was familiar with Dr. Westmann's book "Sport, Physical Training and Womanhood" to which your annotator refers and Dr. Westmann was good enough to attend one of our meetings in company with a distinguished English gynæcologist. His statements and figures provide a strong prima facie case against violent exercise in his recognition of the "virago type," his instances of shattered health, of menstrual difficulties, of relative sterility, of difficult deliveries, of displacements among female athletes: and those who wish to condemn intense competitive sports for girls and young women will find abundant support for their indictment. But quite apart from the absolute antithesis of our own results we were not convinced by much of Dr. Westmann's thesis.

It had been intended to prosecute the subject further with the assistance of two experienced psychologists so some aspects may still be regarded as sub judice. The investigation was originally undertaken as a practical study to seek justification for bestowing or withholding financial support for such activities. But here for the present it must rest, from both the practical and the academic side.

I am, Sir, yours faithfully,

Brook Street, W.1, Nov. 4. ADOLPHE ABRAHAMS.

GAS GANGRENE IN SPAIN

SIR,—Mr. H. A. Brittain's suggestion (on p. 981 of your issue of Nov. 4), that the success of the closed method of treating war fractures reported by Dr. Trueta can be ascribed to the absence of gas-gangrene infection in Spain, is not supported by the facts either of clinical experience or of geography. Cases of gas gangrene occurred with tragic frequency in patients wounded on the Madrid and Aragon fronts during the early period of the war. Complete statistics are not available but many references to this infection can be found in the medical journals—e.g., *Revista de Sanidad de Guerra* (1938, 11–12), where in a report on blood-transfusion in the central zone out of 1871 transfusions 61 were given for gas gangrene. English doctors working in Spain saw many cases in base hospitals when problems of evacuation had delayed treatment. Transport of the wounded in Thomas's splints without previous complete surgical treatment of the wound was responsible for many patients arriving at the base with developed gas gangrene.

In injuries from air-raid bombs the gross destruction of the soft tissues, especially the muscles, and the large proportion of injuries of the lower limbs, with their greater muscle bulk, predisposes to the development of anaerobic infections. Reports on the high incidence of gas gangrene from air-raid injuries in Spain came to the A.R.P. department of the Home Office during the Spanish war. One of the objects of a visit I made to Catalonia in September 1938 was to inquire into this question. During that month and in the following December and January I found that gas gangrene had at one time been a frequent complication, particularly when treatment at first-aid stations had delayed the proper surgical treatment; but with early complete excision of the wound, removal of bruised tissue and immobilisation in a plaster cast the condition had become rare. I saw only two patients, both recovering, in the hospitals of Barcelona in September 1938.

All the air-raid casualties treated in Barcelona came either from the town itself or from the smaller towns and villages of Catalonia, situated mainly on the coastal plain, a fertile agricultural district with small industrial centres. The small incidence of gas-gangrene infection in the cases treated by the closed method by Dr. Trueta and his assistants (one in 1073 patients) cannot be due to geographical factors.

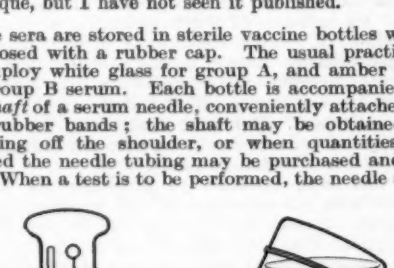
I am, Sir, yours faithfully,

Wimpole Street, W.1, Nov. 13. D. J. COLLIER.

STORAGE AND USE OF GROUPING SERA

SIR,—I expect others have thought of the following technique, but I have not seen it published.

The sera are stored in sterile vaccine bottles which are closed with a rubber cap. The usual practice is to employ white glass for group A, and amber glass for group B serum. Each bottle is accompanied by the *shaft* of a serum needle, conveniently attached by two rubber bands; the shaft may be obtained by breaking off the shoulder, or when quantities are wanted the needle tubing may be purchased and cut up. When a test is to be performed, the needle shaft



Sterile vaccine bottle for storing sera.

is removed from under the rubber bands, sterilised in a flame, and allowed to cool, and the pointed end is plunged through the rubber cap for a few millimetres. The bottle is inverted, and gentle pressure is applied with the finger to the rubber cap to eject a drop of serum from the needle shaft. This technique is equally useful whether one or a series of tests are to be performed. At the end of the sitting the needle shaft is removed, washed through with water, and replaced under the rubber bands.

This simple procedure has a number of advantages. With ordinary care the bottles of sera remain uncontaminated for weeks or months. Packing of a complete outfit is reduced to a minimum. The manipulation required is no greater than in the case of sera sealed in glass capillaries, and the laborious process of filling and sealing dozens of capillaries is avoided. Teat pipettes are often used for delivering the sera from the bottles when many tests are to be done, but they are clumsy; it is only too easy to knock over the little bottle when the pipette is in it, and there is always the risk of interchanging the A and B pipettes; the present method removes these difficulties. The wire loop, used for adding the donor's blood to the grouping sera, and the needle for pricking the skin may also be kept under the rubber bands.

I am, Sir, yours faithfully,

Emergency Blood Supply Depôt, Luton, Nov. 4. G. A. HARRISON.

ARTIFICIAL PNEUMOPERITONEUM

SIR,—The article by Dr. Josephine Barnes under this title in your issue of Nov. 4 interests me greatly. I would have refrained from writing on the subject as my experience of this method of therapy is small, but there are three points suggested by the article which should, I think, be referred to at once.

(1) Should not the pneumoperitoneum have been kept going in the reported case by several more injections?

(2) After my visit to America early this year I came to the conclusion that the best site for the puncture is below the left costal margin anteriorly, especially perhaps in the flabby-walled abdomen of a woman who has recently given birth to a child.

(3) The ascent of the diaphragm is much more rapid, it would appear from our limited experience at Mundesley, in the case of a woman who has recently been confined than in ordinary cases. Perseverance with the injections gradually brings good ascent in the latter, unless there is much pleural thickening, a condition which should be assessed in advance. The diaphragm must not be pushed up too rapidly when symptoms of toxæmia are severe.

Dr. Barnes is dealing with this procedure in its applicability to women with pulmonary tuberculosis who have just been confined. The references at the end of her article show that she is aware of its more general use in cases of pulmonary tuberculosis. For those who are not tuberculosis experts I should just like to emphasise that the procedure is much more commonly used for other patients than for those recently confined.

I am, Sir, yours faithfully,

Mundesley, Nov. 11. S. VERE PEARSON.

DOCTORS IN EMERGENCY

SIR,—I am reluctant to criticise the plans of the Government for an Emergency Medical Service, "but clearly at the outbreak of war the best place for a doctor is to be with his own patients. The most obvious air-raid post is his own consulting-room. He might well find that in the first few hours of an air-raid where he was most needed was on his own doorstep. What is most important is to avoid any immobilising of doctors by collecting them together before there is any need for their services. Proper coördination is most important and a big step was made towards it by an arrangement that not all the Territorial Army hospitals originally designated were mobilised on the outbreak of war. This means that hundreds of doctors are available for treating civilians." The quotation is from a *Times* report of a speech by Mr. Barnays, Parliamentary Secretary to the Minister of Health, on Nov. 30, 1938. It is not quite evident that in London the immobilisation of doctors has been avoided, and I am not quite sure whether the present Minister of Health will wish to have the pronouncements of a former parliamentary secretary recalled. So I will add nothing to the (at that time seemingly wise) speech of Mr. Bernays.

I am, Sir, yours faithfully,

Nov. 12. HAUD IMMEMOR.

EARLY SCHIZOPHRENIA

SIR,—Experience of shock therapy seems to have established that the duration of the schizophrenic illness is considerably shortened thereby and that the sooner after onset treatment is commenced the greater the chance of complete recovery. It will be interesting in time to compare the type of case that responds to treatment with the type that shows no improvement. It has always been said that certain biogenic schizophrenics are doomed to progressive deterioration and chronic dementia whatever is done for them, while others recover with expectant treatment or indeed any treatment which happens to be the current vogue. Professor Golla, however, stresses the fact that many of these chronic dements, particularly of the mute negativistic variety, who would be classified as biogenic examples, can and do return to normal if given intravenous sodium amytal. They may remain normal for

periods varying from an hour to forty-eight hours. During this time they may discuss with insight their own illness and describe critically what has been going on around them during the time when they have been casually accepted as "vegetables." Here at last we seem to have stumbled on that philosophers' stone of our legal contemporaries—the lucid interval; an interval, too, during which the tube-fed patient may take an ordinary meal with enjoyment and be stirred from a statuesque immobility to walk appreciatively in the garden.

This complete if brief restoration of function gives us the greatest encouragement to institute the treatment of *all* schizophrenics as early and as energetically as we safely can. The best time in schizophrenia in which to start shock treatment is arbitrarily laid down as within six months of the onset. But it is difficult to date the beginning of a breakdown. Acute schizophrenia is so frequently an explosion following upon months or years of schizoid events. More difficult still is it to tell the time of onset in those with a fairly long history of waywardness and general maladaptation. Some prominent schizoid incident may be fixed on as the starting-point of the illness. As a rule, however, treatment is not begun until the patient is certified, or is so apathetic that his volition is simply a docile acquiescence to outside suggestion from doctor or parent. The early schizophrenic in a hypersensitive condition shrinks from voluntary entry into a mental hospital, or would soon after admission tender his 72 hours' notice to quit. Yet the time for treatment would justifiably appear to be long before the need for certification makes itself obvious and certainly before lack of affect becomes an established sign.

How many psychiatrists see such early cases and know with the conviction of experience that they are dealing with those who undoubtedly will develop a schizophrenic illness? Yet such patients are just the ones to benefit by an immediate course of shock therapy. Improved technique has robbed the treatment of most of its risks. In time the psychiatrist will probably prescribe shock therapy with the same confidence as the surgeon who advises early removal of an inflamed appendix to avert the onset of an acute abdominal emergency. Yet the mental specialist has necessarily to defer measures he would fain employ forthwith until a like emergency occurs—the emergency of certification. At present he can only advise and hope that his early schizophrenic will not shortly perpetrate some bizarre crime or stage a fantastic act of suicide. Any alteration in the existing law calculated to enforce treatment would constitute a grave attack on the liberty of the individual. So we cannot look to amendment of the Mental Treatment Act for a solution. If such early treatment is to become usual, then it must be instituted outside the precincts of the mental hospital. No matter how luxurious or remote from the main building the reception block may be, yet it remains to the early psychotic with insight an integral part of a mental hospital.

A practical and promising measure is that psychiatric clinics at general hospitals should have a few inpatient beds at their command. Theses clinics too often become a dumping ground used by the medical and surgical staff for their chronic neurotics. Thus the object for which the clinics were formed—the diagnosis of early psychoses—has a diminished chance of attainment. On the other hand, it is essential that all neuropaths *should* be referred to the clinic for diagnosis and, if necessary, for observation, but not for repeated and ineffective psychotherapeutic interviews. For success a fundamental condition must be the coöperation of the family doctor. He should be invited to submit for expert opinion all adolescent cases of anxiety or obsession, of neurasthenia and hysteria and (if there is no organic diagnosis) those labelled general debility or general asthenia.

I am, Sir, yours faithfully,

Wyke House Mental Hospital, Isleworth, Middlesex, Oct. 30. J. T. D. CLARK.

A PLAN FOR BRITISH HOSPITALS

SIR,—I have read the Plan for British Hospitals and your leading article most carefully and have discussed it briefly with two or three medical colleagues in the House. It is sound policy to ventilate during the war the experience and ideas that have been accumulating, so that when peace comes we may take advantage of it to start off on sound lines for the future untrammelled by conventions of the past. But the natural liberalism of our profession shies at socialism and loves the conservative method of progress, consonant with the orderly biological method of development of nature.

Let me first touch on a few minor points. Your commissioner writes: "The individualistic outlook of the consultants has prevented anything analogous to the Mayo Clinic springing up." Surely Sir Arthur Hurst started New Lodge Clinic as a direct inspiration from the Mayo Clinic; and Sir Edmund Spriggs at Ruthin is another exception. So, too, is the team work of many combined practices.

In mentioning emoluments of the municipal service it is misleading to state salary without some estimate of the value of perquisites—board and lodging, rates and taxes, coal, gas and electricity, telephone, garage and various services.

"Why does a . . . voluntary hospital need some 20 seniors and 30 juniors?" Your commissioner fails to mention a fourth reason; because so many of the voluntary hospitals are *teaching* hospitals. Every case is the subject of minute examination, research and record, and the work is purposely distributed amongst as many medical, dental and nursing students and consultants as possible for efficiency, so as to spread experience and responsibility.

In discussing the Emergency Hospital Service, he omits the pickings and allowances which must be added to the salaries quoted.

He says "the paid part-time worker is not a success." In general I disagree. Outside work keeps the part-timer in touch with the outer world of fresh experience and ideas, and of criticisms which he sadly lacks when he is entrenched in a whole-time service.

So I come to the broad questions raised. Regionalisation and decentralisation in general are both desirable, as recommended by Lord Dawson's committee some 15 years ago. The regionalisation of government ministries, especially the Ministry of Health, is a precedent and an opportunity not to be missed.

But I object to any suggestion that a National Hospital Corporation should "take over hospital endowments." This is confiscation of property and responsibility, entrusted to governing bodies, which many of them would resist. An official corporation has little soul and tends to become merely official, based on regulations and audit. Voluntary bodies command the kindly help of their subscribers and supporters, and have a special value for the spirit and comfort of the patients. Indeed their very diversity, if kept within bounds, is of value for originality and progress.

Above all I dissent from the proposed divorce of hospital from private practice. It would divide the profession sharply into two classes, belittling the per-

sonal and domestic care of the people and tending to force them into hospital. This is the natural error of those whose attention is mainly fixed on acute disease. Even for such cases early diagnosis and prophylaxis in daily life, and the aftercare on return to home and work are of paramount importance. The future of medicine seems to me to lie in the increasing development of family practice, with an emphasis on physiological habits, prevention and early treatment; in the greater use of district nurses, midwives and health-visitors; in the greater association of general practitioners with hospital practice and in their free access to hospitals for consultation and for the treatment of acute and chronic cases that cannot be treated at home.

Improvement both in hospital services and in general practice must be looked for on lines of natural development, in accordance with the customs and habits both of the profession and of the people, with utmost publicity, diversity and enterprise allowable under recognised and sympathetic control. Only so will the Plan for British Hospitals be a useful contribution to the progress we all seek.

I am, Sir, yours faithfully,

House of Commons, Nov. 8. FRANCIS FREMANTLE.

SIR,—So the cat is out of the bag at last—liberated, of all people in the world, by the Editor of THE LANCET and his special commissioner! A state medical service it seems is to be foisted on the public and on consultants surreptitiously and in war-time without submission either to Parliament or to the consultants. Incidentally it may be pointed out that the central emergency committee of the B.M.A., which is chiefly responsible for the "eclamptic primigravida" of your special commissioner is a body of 38 members, of whom exactly 6 are London physicians or surgeons! A two months' experience of hospital work in the E.M.S. has indeed for many of us gone far to dispel any leanings which we may previously have had towards a state medical service.

Is it really true that "before the war London consulting medicine was slowly dying"? And if so, how does your special commissioner account for the fact that, according to him, "the London specialist population is grossly overcrowded"? I join issue with him at once when he asserts that each year more and more of the first-rate students go into general practice. This is not at all my experience. In fact when my general-practitioner friends ask me to find them a promising assistant or partner, I am rarely successful in my search. Moreover there is seldom, if ever, any lack of candidates of the highest professional standing for vacancies on the staffs of any of the larger voluntary hospitals. Then again, it is surely no new phenomenon for the young consultant to have difficulty in making both ends meet during his first few years. I fancy that this was always the case. Such was certainly my own experience. It is quite true that, largely owing to provincial and suburban competition, the financial outlook for the young London surgeon is not so rosy as it was 20 years ago. But even so he seems to do reasonably well, as also if he is worth his salt does the young physician. Most of the consultant's financial difficulties are due to preposterous overhead expenses. If hospitals would provide for a consideration simply but suitably equipped consulting-rooms for their staffs for private practice and increase their pay-bed accommodation, these financial difficulties would largely vanish. Moreover the hospitals also would benefit from such an arrangement. They would receive rent for the accommodation and their staff would be more constantly on or near the hospital premises.

I think that your commissioner might have omitted the gibe about consultants who earn an odd three guineas by securing priority of admission to hospitals for their patients. In no reputable hospital would such a procedure be tolerated for a moment. As a visitor for the King's Fund, I can vouch for this for all the hospitals which I have inspected, and I am sure that it is true for most, if not all, hospitals of repute.

"The efficient firm . . . practically never needs a consulting physician and seldom a consulting surgeon." This is a ridiculous statement. In my experience it is the more efficient firms who are aware of their own limitations in cases of special difficulty, and who consequently most often ask for the consultant's help. As for the inefficient firms, of whom fortunately there are not many, any experienced consultant could a tale unfold in this connexion (just as no doubt efficient firms could unfold tales of inefficient consultants, of whom naturally there is bound to be a certain number).

Your commissioner has certainly made out a good case for regionalisation and decentralisation. But, as Dr. Izod Bennett points out, there are cogent arguments against such a project, and I agree with him that the insistence on a whole-time service is the crux of the problem, and consider that there should always be at least a leaven of part-time consultants. Certainly in future all members of the hospital staffs, and not only as at present an increasing proportion of them, should be paid for work done for the hospital. Is it the case that "private practice after a time becomes more important than public service"? Surely your special commissioner can have little experience of the work of most voluntary hospital staffs, who, though their hospital work is honorary, give it precedence over their private practice. There are no doubt a few black sheep, but certainly these are quite exceptional. On a part-time basis such individuals would be quickly liquidated so soon as their tendency became apparent. By the employment of a largely part-time and non-pensionable staff the hospitals would effect a large salary economy, and would undoubtedly benefit in other directions. There are certain aspects of doctoring which can be appreciated only by those engaged in private practice. I very much doubt if students taught entirely by full-timers would make as efficient general practitioners as those taught, in part at any rate, by part-timers. They would possibly be more erudite, but would they be as good clinicians? Do not such students tend to subordinate history-taking to laboratory investigations? This, without doubt, is the impression which most examiners get. Nobody can argue as to which of these methods of approach is the more valuable to the general practitioner.

Finally, I doubt whether it would be only "the very rich" who would decline to become glorified outpatients under your commissioner's plan, but would prefer, as now, to pay three guineas, or even five elsewhere. I wonder how many of these full-time directors, or deputy-directors, would devote an hour of their time to a consultation, as do most physicians. No doubt your commissioner would consider this an hour wasted. But the patient would not.

I am, Sir, yours faithfully,

Nov. 7. MAURICE CASSIDY.

SIR,—Like so many of your readers I found myself greatly stimulated by your commissioner's article and and I looked forward to a considerable correspondence, which has now begun to appear in a most satisfactory fashion. There are many points on which one could

join issue with the writer, one central one being this question of whole-time medical staff. For many years I have been convinced from observation and reason that part-time employment is better than whole-time, for every kind of worker, not least the doctor. The part-time worker has to keep in touch with other people, and in the case of hospital work he benefits from the double stimulus of his scientific contacts in the institution and his rather more competitive life with his colleagues outside. The lamentable experience of official medical organisation which most of us have had recently in itself suggests a confirmation of this point, and the introduction of a state medical service must be postponed for many years on this account.

The special hospitals receive no mention in this interesting scheme, and all who are familiar with the reasons for their existence and with the valuable contribution that they have made to medicine as a whole will feel that this is a part of the organisation which deserves some thought.

May I suggest that since so many of us have time on our hands just now, and since creative occupation is so valuable under these circumstances, you should offer a prize for the best presentation of a plan which is sent in by the end of the year? If these schemes were condensed and concise and each were sent in under a pseudonym, you would, I think, get a great deal of valuable material that could be made use of later on. If the Minister of Health were then to appoint a committee which was representative of all branches of the profession and included lay administrators (who should also be allowed to take part in the competition), some extremely valuable work might be done during the war to prepare the ground for the post-war era.

I am, Sir, yours faithfully,

London, W.1, Nov. 10. PSYCHIATRIST.

SIR,—Can this report of a broadcast be true?

This is *The Lancet* calling, over the Evacuationsender, from Aylesbury in the Chiltern Hills where the Ministry feeds its flocks. Here is our news bulletin, copyright reserved, the announcer being our special commissioner for wrecking the established system of hospital service.

"Et tu," Editor? And your special commissioner? "This is the most unkindest cut of all." And, yet I doubt not that you both flatter yourselves that "you did what you have done in a general honest thought." But, scarce have one's colleagues come to rest from the high explosive which dispersed them over the face of earth and water than you assert that they will never recover from the shock. You threateningly proclaim that the hurried organisation of the Emergency Hospital Service is to have an "inexorable upshot," and that "the whole aspect of hospital and consulting practice is bound to change beyond recognition." Maybe, now that the hydra-headed wreckers have shown themselves so early, those who prize the splendid hospital service which has been built up through the centuries will hurry back from the periphery to the centre of the Sectors and hold the fort for their comrades who are further afield, and save the voluntary hospitals of London from being made safe for bureaucracy.

One is tempted to proceed by question in the House and ask the Minister for Home Security "whether the broadcast from the Chiltern Hills has been brought to his notice, and whether he will assure those who are absent on national duty that the wreckers will be interned for the duration of the war and thus prevented from spreading alarm and despondency; whether the policy of frightfulness will be checked and the chances of 'blitzkrieg' nullified by appropriate Orders in Council under the Emergency Powers Act." Or one might ask the Prime Minister "whether, in order to counteract cleverly contrived propaganda, he will make a categorical denial that the First Lord of the Admiralty is in any way responsible for this attempt to torpedo the Home Front, and that we may be assured that the bombers and wreckers have been driven back, and that they have returned to their bases with heavy loss."

But question in the House is so notoriously liable to set the servants of bureaucracy composing an evasive answer that I hope I may be permitted to remark that I am forced to doubt whether your commissioner is unbiased. All through his review there runs an undercurrent of gibing, and gloating over the difficulties and anxieties of consulting practice—but never a word of praise for those whose names have been and are famous in British medicine, or for the high regard in which British medicine is held in other countries.

Your commissioner seems to have a bee in his bonnet about consultants, particularly in London, as witness remarks such as the following, which seem to breathe malice and hatred and all uncharitableness. "Before the war consulting medicine was dying. . . . The consultant is to be rescued from penury. . . . The personnel of Harley Street is in danger of bankruptcy. . . . Consultants get their patients by the charity of the G.P.s. . . . Their large fees have put their services outside the range of whole sections of the population as a private proposition." Not a word about the successful efforts they have made to bring within the reach of all classes the best that scientific medicine has to offer. "They are willing to see for an odd three guineas patients who want to get into their hospital beds without going on the crowded outpatient waiting list." Not a word about the honesty of the patient and his medical adviser in seeking for a private consultation, for which the patient may be well able to pay; nor for the consultant who frequently reduces or forgoes his fee to meet the needs of the patient; nor of the safeguards to prevent undue influence, without regard to urgency, affecting the order of admission to hospital of those on the waiting list.

Lastly I quote his dictum that "decentralisation destroys the last hope of the honorary consultants and they must become part or whole-time hospital doctors." This may be regarded rather as a nail in the coffin of decentralisation than as the quietus of consultants as we know them today.

You, Sir, talk about the "facts" which are all there for those who care to face them, and you are impressed by the way your commissioner assembles them. I venture to say that he dissembles them and attempts to give the appearance of facts to many statements which would not be accepted by those familiar with the voluntary hospitals and consulting practice. On these so-called facts and the unwarranted assumptions he draws from them he builds a programme, the first part of which is essentially destructive, and the second an attempt to deduce that the whole-time paid worker is the ideal.

Assuming the cloak of a far-sighted reformer he takes advantage of the fears and anxieties of the moment to try to drive men into whole-time salaried posts in which many would smugly rest content, deprived of stimulus and enterprise, and comfortably await their pensions—satisfied with mediocrity—adding to the great and increasing band of direct or indirect state employees.

"There is everything to be said for whole-time and

little for part-time service" says your commissioner, and he asserts, I know not on what authority, that "it is the experience of most people that the part-time paid worker is not a success" and that "hospital work should be a career in itself." In conjectural vein you add: "If the immediate future is to breed a new race of whole-time physicians and surgeons . . . and if staffing on a whole-time basis makes for efficiency in work and administration, then it must have come to stay."

But your commissioner agrees that "it is the multiplicity of openings for seniors which has enabled the voluntary hospitals to use and produce a multitude of talented men who have developed individual lines of work and thought. The rivalry has kept them fresh and up to date. Command and responsibility in early middle-age has given them independence and judgment." There has been a constant output of trained men from hospital firms. The country is staffed with them, and that is why the standard of general practice is so high in England today. The E.M.S. is staffed with them. The fighting services are requiring them and there are none too many. Double the size of the units and staff them with whole-time men and you halve the openings for seniors and halve the output at the very least.

"Decentralisation has come to stay," your commissioner likewise boldly asserts, and "regionalisation and decentralisation are both peace-time desirabilities." He argues as if the danger of recurrent war with air attacks was to be the deciding factor in favour of decentralisation, and says that if there is any danger of future war decentralisation must remain. Are we, for all time, to live in caves? Are government offices to remain dispersed or to be built underground? Are houses to be built with bomb- and gas-proof rooms? Are all the facilities with which large town communities provide themselves to be withdrawn?

For regionalisation and careful distribution of hospitals there is much to be said, but that does not carry us far towards the complicated and involved organisation which your commissioner regards as an essential corollary. It is over decentralisation that your commissioner drifts into the fantastic. He would have the outpatients in the centre, the hospital beds on the outskirts. He would have a peripatetic staff wandering from periphery to centre and back again, accompanied by their residents and students. What of scientific departments? Are they to be duplicated? And X rays also? Is the pathologist, the physicist and the biochemist to be available in both places? Are the records to be available in both places? Is the student going to find it easy to plan his day with the hospital bisected? Are the members of the staff going to find it easy to collaborate?

No, Sir, an efficient hospital must be self-contained. If it is to be run economically, duplication of expensive services must be avoided. Where the population is, there must the hospital services be also—both inpatients and outpatients—not only for the sake of the sick and for the sake of collaboration between G.P.s and specialists, but for the sake of the patients' relatives and friends who wish to visit them after a busy working day. Three days a week they go along, and often a business or a home is run from the sick bed to the comfort and peace of mind of the patient and the benefit and advantage of the business, the family and the home. Do hospital patients wish to be treated on the outskirts? Does the reaction of the people to evacuation encourage us to think so? Do private patients hanker after treatment in the country? No, Sir, where the people are there must the facilities be. And in the great cities, on which roads and railways converge, there must the super facilities be.

Lastly, let us examine your commissioner's ideas for the central control of the service he envisages. He would have a national organisation. He suggests a five-year charter for the hospital authority, and every five years a *searching* examination by Parliament—the body which passes departmental estimates for hundreds of millions in a thin house in a few hours. He talks of these measures as safeguards against red tape. Why, initiative, originality and efficiency would be stifled in bureaucracy—the umbilical cord of the lusty babe of his dreams would be tied with red tape.

"Suffer not the old King under any name!"

"All we have of freedom, all we use or know—
This our fathers bought for us long and long ago."

First your commissioner would stain his hands with robbery with violence, like the rape of Poland. He would take over voluntary hospital endowments, sell metropolitan sites; and then undertake *vast* building operations. Is this what the war is for? I thought it was to fight against methods of this sort. Enough of decentralisation, and all the lust of loot which it engenders!

"I love my country; and am not
One that rejoices in the common wrack."

I am, Sir, yours faithfully,

ALFRED WEBB-JOHNSON.

Portland Place, W.1, Nov. 8.

SIR,—I do not feel that the correspondence column of the medical press is the right place to discuss the merits or demerits of the plan for hospitals put forward by your special commissioner. The council room, where reason replaces invective, and argument is of more value than dogmatic assertion, would be more suitable.

One thing is, however, clear and is made clearer by your commissioner's article and by experience of the two months old E.M.S. Consultants must put aside their traditional dislike of medical politics and their differences of school or outlook, and unite in council if their views are to gain the hearing which their position, both in the sphere of education, and, I believe, in the esteem of the public, entitles them. If your commissioner's article leads to such counsel being taken it will have done some good, and he may be forgiven the venomous and uninformed attack on consultants to which anonymity lends a weight which would probably disappear over a signature.

I am, Sir, yours faithfully,

London, W.1, Nov. 11. E. G. SLESINGER.

SIR,—In your cheerful if somewhat premature obituary of the voluntary hospital system, you remark that hospitals exist for the benefit of the public. Among those public benefits I should accord a high place to the training of the next generation of medical men. Dr. Izod Bennett questions what he happily calls your commissar's skill as the obstetrician of a new system; to continue the gynæcological metaphor I would suggest that the procedure he advocates is also a sterilising operation. His only contribution to the consequent great difficulties of rearranging medical education is two hospital buses! Although he says that the units point the way to a satisfactory whole-time service, I should maintain that the success of the unit system in this country is due to its restriction to one firm in each of the three main branches, so that the student receives only part of his teaching of the more academic sort, and the rest from those who are

in daily contact with the problems of private practice. To my mind this is essential. I am not clear how the "private consultant" airily referred to on p. 949 is to be created; I have always believed that the right way for a consultant to build up his practice is by gaining the confidence and support of his own pupils. Yet under the conditions proposed a medical man is to be debarred from calling upon the services of his old chief, while I presume the new type of consultant is to advertise discreetly that he is willing to rank as such.

It is news to me that before the war London consulting medicine was slowly dying. A very distinguished consultant told me forty years ago that he would be the last general physician, thereby falsifying his own usually correct prognosis. I agree with Dr. Izod Bennett that our failure to permit the public clearly to distinguish between the true consultant and the charlatan increases our difficulties. That changes must and will come is obvious; what seems clear to me is that if your commissar has his way it would deal a death blow to the well attested merits of the voluntary hospitals as an educational system. These can be preserved by far less drastic and destructive methods, such as the Treasury block grants have achieved in other fields of education.

I hesitate to attach the label of levity to THE LANCET'S attitude, but I do feel, Sir, that you have not sufficiently realised the gravity of the changes you envisage. No longer a teacher in a medical school, I sympathise deeply with my junior colleagues in their present difficulties and future dangers. It would indeed be a grim outcome of this war for liberty if they should lose their own.

I am, Sir, yours faithfully,

Cavendish Square, W.1, Nov. 8. W. LANGDON-BROWN.

SIR,—At the end of your recent leading article you speak of the elasticity of mind and the liberty of action essential in the control of any hospital plan. I am alarmed for the future of the medical profession if we don't see that this war is a great opportunity for the Civil Service to get control of the medical profession—through the Emergency Medical Service—and in my opinion that will be a bad thing both for the general public and the doctors. Mr. Beverley Baxter hits the nail on the head when he says that the average civil servant has no idea of the life of the country; and the pity of it is that they think they know a great deal about it. Who is to watch the position I don't know; but I do dislike allowing our great and free profession—the most liberal and broad of all the professions—to come under the domination of people whose only claim to control is the fact that they have read a bit of classics, and know how to hold a cocktail glass. Their background is all wrong, and our slogan should be—Doctors to control all health matters. I have had an opportunity of observing medical affairs from many angles, and I am convinced that I am right. Like D. H. Lawrence I feel it in my solar plexus.

I am, Sir, yours faithfully,

Nov. 5. LAST DITCH.

DISCOVERY OF ŒSTRONE OR THEELIN

SIR,—I am writing to inform you of an erroneous statement made in the leading article on œstrone and progesterone in the adrenal gland in THE LANCET of Sept. 9. At the top of page 607, it is stated ". . . and Beall's isolation of it from the adrenal cortex is its first preparation in pure form from any kind of tissue." The reprint enclosed contains conclusive evidence of the isolation of theelin (œstrone) from human placenta. The isolation was accomplished in 1938 and the results published during the same year. Possibly the error in your article is due to my use of the term theelin. Since the first isolation of theelin was accomplished in my laboratory in 1929, and I named the newly discovered compound theelin, I have not seen the desirability of adopting the name œstrone, proposed at a later date by other investigators.

I am, Sir, yours faithfully,

E. A. DOISY.

Saint Louis University School of Medicine, St. Louis, Mo., Oct 17.

*** We are indebted to Professor Doisy for pointing out this error. It was due not to any confusion of terminology, but to the fact that the writer was thinking of the usual tissues of the body but failed to give the necessary precision to his statement. Needless to say, no reflection was intended on Professor Doisy's work on the œstrogen of the human placenta (Westerfield, W. W., MacCorquodale, D. W., Thayer, S. A. and Doisy, E. A., *J. Biol. Chem.* 1938, **126**, 195).—ED. L.

WHY NOT NUPERCAINE?

SIR,—With reference to your annotation of Oct. 28, we beg to bring the following facts to your notice.

The trade mark, Percaine, was registered over 20 years ago, although the product itself was not placed on the market until 10 years ago on account of continued researches. The name, Nupercaine, was adopted in the United States, because procaine there was official. When percaine was placed on the market in this country procaine was not in the British Pharmacopœia, in fact it did not become official in this country until three years later. At the time we were very surprised that the name procaine had been adopted in the B.P., and it is to be hoped that it will be changed in the next edition.

In the case to which you refer, the confusion was not between the names but between the strengths of the respective solutions. As stated in the report of the inquest, the doctor was well aware that he was using percaine and not procaine.

We are, Sir, yours faithfully,

Horsham, Sussex, Oct. 30. CIBA LIMITED.

The Lancet 100 Years Ago

Nov. 16, 1839, *p.* 288

From a leading article on a projected King's College Hospital.

. . . the Greeks and Romans had no Hospitals of any kind. . . . The Temples of Æsculapius were resorted to by all classes; and they were planned so judiciously, that little doubt can be entertained of their superiority over Hospitals, in many respects, if superiority be measured by the proportion of recoveries. The Greek Temples of Health were not placed, like the Hotel Dieus, the St. Bartholomews', the St. Thomases, or the London Hospitals, in the midst of a crowded, unhealthy city. They were built, as PLUTARCH remarks, out of the cities, upon high, isolated spots; in the suburbs of the town, as in Cos; in open plains, as that of Clitonis, in Arcadia; surrounded by gardens or sacred groves, which intercepted the insalubrious winds, and purified the air. . . . Mineral waters, or rivers for baths, were near. Sometimes gymnasia were erected. The sick were rigidly dieted; their minds were calmed or excited by the popular superstition; and, living in the vicinity of the Temple, they were not crowded within its walls, but were introduced, at intervals, to receive the visits and prescriptions of the God.

PARLIAMENTARY INTELLIGENCE

ON THE FLOOR OF THE HOUSE

By MEDICUS, M.P.

Mr. CHAMBERLAIN was kept away from the House of Commons last week and his absence made a very noticeable gap. This was especially the case on Thursday, when the Prime Minister would normally have made a progress report on the war. On the same day a special speech should have been made in the City, but neither the Lord Mayor's Show nor the Government statement were the same as usual. The Lord Mayor's Show was absent and Sir John Simon read Mr. Chamberlain's speech and read it so effectively that it might have been his own.

The Prime Minister's indisposition brought up the question in the minds of most members as to what would happen if the indisposition became an illness and the illness a disabling one which entailed resignation. Who is there to take Mr. Chamberlain's place? The popular choice would probably be Mr. Winston Churchill, who made his statement on the war at sea on Wednesday and who spoke on the wireless on Sunday night. What the House, and the country, likes about Mr. Churchill is his frank acknowledgment of the difficulties and dangers before us—and his equally frank and forcefully expressed belief that we can counter them. But whether Mr. Churchill would be equally acceptable to the political powers that be is another story. And Mr. Churchill is a man most loyal where he has given his allegiance, so that it is sure he would support whatever was decided in the country's interest.

* * *

The House has discussed national expenditure with detachment, for everyone realises that however many millions are required they must be provided, so that the second reading of the National Loans Bill occupied only 40 minutes. We have also discussed the rationing of butter, bacon and ham and the possible application of rationing schemes to other foods. But it is clear that the only shortages are in butter, bacon and ham, and that these are due to interference with special continental supplies. The difficulties of special character affecting these foods may be overcome a little later on; meanwhile, as from the middle or end of December, rationing. What has not yet been considered, however, is a national food plan looked at not from the point of view of quantities and the distributing agencies available to do the work, but from the point of view of the protective foods required, especially for children. The effect of butter shortage in Great Britain during that "other war" of 1914–18 and of its still greater effect in Vienna and Budapest, remains a memory in medical minds at least. And such ill-effects must be avoided if avoidance can be arranged.

* * *

The House has devoted a good deal of thought, some of it expressed in questions and some of it in private or group discussions, to the health of civilians and especially the health of children evacuated to rural reception areas. Mr. David Adams wanted to know whether the Minister of Health has given instructions as to "the number or proportion of medical officers who should be transferred from evacuation to reception areas." The Minister replied that the authorities concerned have been asked to assist each other, but the suggestion that the Minister himself should accept responsibility for initiating these arrangements seems to point to the only way out. It is too complicated a business for the local authorities to deal with in view of the scattering of medical personnel over wide areas and the urgent calls for service for casualty and civil defence services. Questions on hospital bed provision for civilians revealed that such beds are available in town and country, but again their allocation and use present great difficulties for local councils or hospital committees or other authorities with limited reference, so that it seems that again the responsibility should be put on the Ministry of Health.

Provision for civilians in war-time involves not merely provision for ordinary medical and hospital attention in sickness, it should at least involve an even more comprehensive public health organisation. This is particularly necessary in the reception areas, where the increase of child population and to a less extent the increase of adult population creates special problems. What may we expect in the way of epidemics? Will the townee child population prove to have the same kinds of immunity as the country child population? Will there be cross-infections? What, for example, is the state of diphtheria immunisation in the rural areas? And what can be done about it?

What appears certain is that a more complete control should be exercised over the disposal of the civilian public health (including school medical) services and that provision should be made to bring all medical arrangements in the reception areas up to such a strength as to enable (*a*) an epidemic or epidemics and (*b*) a flood of more evacuees in case of extensive air attacks on towns to be dealt with efficiently and at once. It is as necessary to have medical services to safeguard the health of the civilian population as to safeguard that of the fighting services. After all, we are in a totalitarian war and must make totalitarian medical provision. Probably more will be heard of this matter in the next week or so, and we have now got sufficient experience in both town and country under war conditions to enable us to make the necessary arrangements with a fair prospect of success.

FROM THE PRESS GALLERY

Chartered Bodies and War Conditions

IN the House of Lords on Nov. 7, Viscount CALDECOTE, the Lord Chancellor, moved the second reading of the Chartered and Other Bodies (Temporary Provisions) Bill. He explained that the general purpose of the measure was to enable modifications to be made in the constitutional and electoral procedure of various chartered and statutory bodies to meet war conditions. The Lord President of the Council would be authorised under clause 1 of the Bill, on the application of the body concerned, to make modifications of the provisions of the charter. Such power would only be exercised for the purpose of securing economy or efficiency. Clause 2 of the bill, which dealt with statutory bodies and corporations and not with chartered bodies, proposed to do the same to these bodies as had already been done in regard to local authorities. Among the bodies concerned by this clause was the General Medical Council. It provided for an order in council to be made which would extend the term of office of members, or reduce the number of persons required to constitute the corporation or body, or to perform any of its functions. Clause 3 of the bill did for universities and colleges, other than

Oxford and Cambridge, what had already been done for those two universities, by enabling them to make financial adjustments, prolong terms of office, suspend conditions relating to scholarships, and generally make arrangements for meeting special war-time conditions.

Criminal Justice Bill Dropped

Sir SAMUEL HOARE, Lord Privy Seal, replying to a question by Mr. LEACH, said that in view of the substantial measure of agreement on the main provisions of the Criminal Justice Bill, and of the time already given to its consideration, the Government would have been glad if further time could have been found to carry the measure through its remaining stages. But they had reluctantly come to the conclusion that time could not be found for this work without prejudice to the effort on which all their energies must now be concentrated.

QUESTION TIME

Hospital Beds in London

Dr. HOWITT asked the Minister of Health how many London hospital beds were evacuated at the commencement of war, and how many of these beds were today available for the treatment of civilian sick.—Mr. ELLIOT replied: At the commencement of war, about 8000 hospital beds in the county of London were evacuated by sending patients either to their homes or to other institutions, and in addition there were about 7500 beds already vacant, making 15,500 in all. At the present time there are in these hospitals about 13,000 vacant beds available not only for casualties but also for the civilian sick, who, as I have made clear on several occasions, are being admitted to the hospitals if they are in need of inpatient treatment.

In reply to a further question the Minister added: I am advised that adequate medical and nursing personnel is available at these hospitals for the cases which are at present coming forward, but further proposals were made to me last Friday by a special committee which was representative of all sides of the profession, and these proposals are now under active consideration.

Mr. CROWDER asked whether the Minister would consider authorising the immediate re-opening of London hospitals for the treatment of civil sick on a much larger scale than at present.—Mr. ELLIOT replied: A special inquiry which I made on Monday showed that the nine big London hospitals—the London, St. Bartholomew's, University College, Middlesex, St. Mary's, Westminster, St. Thomas's, King's College and Guy's—all have vacant beds available for the ordinary needs of the population. I am, however, carefully examining, in consultation with the governing bodies and their staffs, what steps are possible to increase the facilities and beds available at the central hospitals.

Central Medical Register

In reply to a question by Mr. Groves the Minister said that of the 44,608 qualified medical practitioners on the Medical Register, and resident in Great Britain or Northern Ireland, 43,650 are included in the register kept by the Central Medical War Committee. The offers of service recorded in the register are, in the case of a number of practitioners, subject to their commitments to H.M. Forces or to local authorities or other bodies by which they are employed.

R.A.M.C. Officers' Grievances

Mr. GROVES asked the Secretary of State for War whether he was aware of the dissatisfaction amongst serving officers in the Royal Army Medical Corps, and particularly amongst those called emergency officers who were over 40 years of age and who had experience in the last war, at remaining as junior officers while comparatively recently qualified men were appointed as senior officers; and whether this anomaly would be investigated with a view to its being corrected.—Mr. HORE-BELISHA replied: Consideration is being given to cases of medical officers with military experience in the last war whose age and military and professional experience justify a higher rank, with a view to meeting such claims wherever possible.

Short-wave Therapy and War Casualties

Sir ERNEST GRAHAM-LITTLE asked the Minister of Health whether he was aware of dissatisfaction among specialists practising physiotherapy because of the scanty utilisation of their expert skill in war-emergency service; and whether he would institute an inquiry into the number of short-wave therapy machines now available in those hospitals in which the Minister proposed to treat war casualties.—Mr. ELLIOT replied: I am aware that during the present lull uneasiness is felt by many specialists lest their skill and knowledge may not be fully utilised. I can assure the hon. member that the services of the specialists referred to will not be lost sight of when the need arises. In the meantime, I am advised by my consultant adviser in physical medicine that the present arrangements are adequate.

Midwives and Emergency Service

Mrs. ADAMSON asked the Minister the number of midwives, or district nurses practising as midwives, who had been called up for service in emergency hospitals since the outbreak of war.—Mr. ELLIOT replied: No midwives or district nurses practising as midwives have been called up for service in emergency hospitals, since they are not enrolled as such in the Civil Nursing Reserve, from which nursing staff for hospitals under the Emergency Hospital Scheme is provided. Some nurses who possess the certificate of the Central Midwives Board have been enrolled and called up, but I could not state the number without detailed inquiries. I may add that a considerable number of midwives have been transferred from evacuation to reception areas for service in emergency maternity homes, which, according to the returns received, are adequately staffed.

Welfare Centres in London

Dr. HOWITT asked the Minister what arrangements he was making for the re-opening of infant welfare centres in London, in view of the fact that more than 50 per cent. of the infant population of London was now resident in London.—Mr. ELLIOT replied: I communicated with all the metropolitan boroughs on this subject about the middle of October. Infant welfare centres are now open in the great majority of the metropolitan boroughs. The re-opening of further centres is a matter in the first instance for the responsible welfare authorities, acting in the light of their knowledge of local needs and of the facilities available in their areas.

Dr. HOWITT: Will the Minister bear in mind the importance of having the same doctors returned to this service wherever possible, as they are known to the mothers and will be better able to carry on with the work which they had been doing before the outbreak of war?—Mr. ELLIOT: I have had that matter in mind.

Cheap Milk for Mothers and Children

Mrs. ADAMSON asked how many maternity and child-welfare authorities in England and Wales, respectively, had submitted proposals for the supply of cheap milk for mothers and young children, as requested in circular 1840, dated Aug. 2; how many had stated that the matter was under consideration; and the number that had not replied.—Mr. ELLIOT replied that 78 welfare authorities had submitted proposals, 122 had stated that the matter was under consideration, 171 had not yet replied, and 36 had deferred consideration.

Tyneside Blood-transfusion Service

Mr. DAVID ADAMS asked the Minister whether he was aware that the scheme for the expansion of the Tyneside blood-transfusion service, undertaken with the approval of the regional hospitals' officer, whereby membership of donors had been expanded from a normal 350 to 3000, the estimated requirements for the area being 10,000 for eventualities, was being held up and might be abandoned

for lack of financial aid; and if the request for a grant of £250 made to him through the regional hospitals' officer several weeks ago would now be forthcoming.—Miss HORSBRUGH replied: The secretary to the Tyneside service has been informed that any necessary expenditure incurred in grouping blood donors, which cannot be met from voluntary sources, will be reimbursed on receipt, through the hospital officer, of vouchers showing the expenditure actually incurred.

Housing and Sanatoriums in Wales

Mr. JAMES GRIFFITHS asked the Minister whether, having regard to the urgent need for the provision of new houses in various areas in Wales, and in particular in the rural areas, revealed in the report on the anti-tuberculosis services in Wales, and in the surveys undertaken by his department, he would give favourable consideration to the approval of schemes to meet the most urgent cases.—Mr. ELLIOT replied: I will certainly consider any such schemes most sympathetically, especially for the rural areas.

Mr. GRIFFITHS asked the Minister the number of patients on the waiting list for admission to tuberculosis hospitals and sanatoria in Wales on the last convenient date; what steps were being taken to increase the available accommodation; and if such schemes would be given favourable immediate consideration.—Mr. ELLIOT replied: I am informed that on October 28 last the number of patients on the waiting-list for admission to tuberculosis sanatoria and hospitals in Wales was 225, or, including patients discharged by reason of the emergency hospital scheme and awaiting re-admission, about 600. The hutted hospitals in Denbigh and at Chepstow are making steady progress and these will, I hope, be of assistance, subject to the requirements of the casualty service, in connexion with the treatment of tuberculous patients.

Medicinal Plants

Sir JOSEPH LEECH asked if the Minister of Health was aware that there was a shortage of supplies, and a great rise in cost, of medicinal vegetables and plants hitherto obtainable from overseas which could be grown in the United Kingdom; and what steps he was taking to deal with this situation.—Mr. ELLIOT replied: I am aware that there is a shortage of a few medicinal plants grown abroad, and that consequently there have been some rises in price. I have the situation under careful review and am taking steps to encourage so far as practicable the cultivation in England of the plants in question.

INFECTIOUS DISEASE

IN ENGLAND AND WALES DURING THE WEEK ENDED OCT. 28, 1939

Notifications.—The following cases of infectious disease were notified during the week: Smallpox, 0; scarlet fever, 1336; diphtheria, 1002; enteric fever, 32; pneumonia (primary or influenzal), 543; puerperal pyrexia, 138; cerebrospinal fever, 25; poliomyelitis, 21; polio-encephalitis, 6; encephalitis lethargica, 2; dysentery, 47; ophthalmia neonatorum, 73. No case of cholera, plague or typhus fever was notified during the week.

Deaths.—In 126 great towns there was no death from smallpox, 3 (0) from enteric fever, 1 (0) from measles, 3 (0) from scarlet fever, 3 (0) from whooping-cough, 26 (1) from diphtheria, 34 (2) from diarrhœa and enteritis under 2 years, and 28 (2) from influenza. The figures in parentheses are those for London itself.

Croydon, Southampton and Hull each had one death from typhoid. Fatal cases of diphtheria were scattered over 19 great towns, Plymouth reporting 3, Chester, Gateshead, Leeds, South Shields and Leicester each 2. Liverpool had 4 deaths from diarrhœa, Hull, Birmingham and Nottingham each 3.

At its eighteenth annual convention the American Congress of Physical Therapy awarded one of its gold keys for distinguished research during the last year in various fields of physical therapy to Dr. J. B. Mennell.

. . . . IN ENGLAND—NOW

(FROM OUR PERIPATETIC CORRESPONDENTS)

BART'S is the head of a sector which extends from London to Luton, and its staff is scattered throughout the sector. The clinical students likewise are all distributed throughout the sector in 13 different hospitals. It so happens that the hospitals are collected together into three groups, with three large hospitals in the centres—Bart's, the Friern hospital at Southgate, and Hill End hospital at St. Albans. The students, who number about 450, are more or less equally distributed in the hospitals around these centres. There is now in some ways more clinical material than we have at Bart's in peace-time. The students in their first clinical year are based on Hill End, where are the professors of medicine, surgery and midwifery, whose normal duty it is to give preliminary instruction during the first three months of the students' course.

In their intermediate years the students are based on Bart's, where they can get all the special department teaching they need. There are outpatient departments running in medicine, surgery, gynæcology, throats and ears, eyes, orthopædics, skins, tuberculosis and V.D.s. Also from here arrangements have been made for them to do fevers and psychiatry. The final year students are housed at Friern hospital, where they get special tutorial education for the final examinations. After they are qualified, those desirous of taking their M.B. are being stationed at Mill Hill School, which is the headquarters of the sector and has been converted into a hospital. Teaching in midwifery goes on throughout the sector and it has been possible to arrange a larger number of cases than we get normally. All this work has been going on since Sept. 15.

The pre-clinical students have gone to Cambridge, where the first year are taught at Leys School and the second year in the University laboratories. They live in Queens' College and in University lodgings. The entry this year is actually larger than it was last year.

Athletic facilities have been provided at Mill Hill School and in some of the other hospitals, and at Cambridge the students are allowed to use the Queens' College athletic ground. We seem to have managed to get things going extraordinarily well. We were given three months in which the students were to be free from education, as it was thought the world would be in such a state of chaos as to make it impossible, but thanks to the efforts of an energetic dean and his assistants, a first-class scheme has been set going which compares very favourably with the normal course which we can give at Bart's.

* * *

I recall meeting a German delegate at a medical conference a year or two ago. He was a tall, broad-shouldered Nazi of about forty, quite lacking in subtlety, and with that naïve, aggressive enthusiasm which is at once appealing, pathetic and exasperating. He had quite an important official position in the medical organisation of the Reich, and I could not help wondering how many learned and more mature "undesirables" had passed on into concentration camps or exile before he and the empty place met together. The morning session finished, none of the British seemed to be responsible for giving him hospitality. I was rather tired, and did not want to listen to German, still less to exert myself to talk it; but I did not like to see him go off by himself, so I asked him to have lunch with me. We strolled across Westminster Bridge, and I managed to keep the conversation matter-of-fact and simple, which was all I could encompass in my halting German. He could not speak English, knowing only isolated words. Opposite the Horse Guards, he told me with great delight that on his way down that morning he had got a fine snap of them; and we halted a moment

or two to admire them again. Till then he had been a pleasant if somewhat stiff companion; but as we moved on again quite suddenly he started to tell me of his fear of *Bolshevismus*. It was as though Dr. Goebbels had put on a gramophone record. He hoped that we British would take our stand by them, to fight the accursed thing. What could not Britain and Germany do together? It was clear that his medicine took a very secondary place to his Nazi religion—or would the word dogma be more accurate? Clearly he had been waiting the right moment to buttonhole me with his message of salvation. I grinned at him, and remarked in my own tongue that in England the way we usually fight a bad idea is by putting forward a good idea, because we have learned by now that you cannot crush ideas merely by cracking the heads that hold them. Alas! he could not understand it in English, and I could not get the idea over in my attempts at German, so that we rather lost contact. It was a pity, for he might have passed it on to Hitler on his return to Germany. He ate a good lunch, and became an ordinary human again; and we pledged each other in iced lager. But we lost contact again when I tried to find out why he was so frightened of *Bolshevismus* and why his emotions were so disturbed about it; if he thought his own ideas were so much better, why was he not more confident about their strength? I tried to tell him that many of us felt that they must be very frightened and unsure of themselves to allow themselves such cruelty in persecution; I do not know whether he understood, and he only seemed hurt at my obtuseness. We walked back to the conference hall almost in silence, said Auf Wiedersehen, and as far as I know passed out of each other's lives for ever. But as I look back on the encounter, I feel very sad that for lack of the ability to talk German I missed the chance of explaining that brave tolerance which is a very precious part of our tradition; but I am even more sorry that we never got close enough for me to be able to tell him that I was aware of his attempt to *use* me, to proselytise me, and that by so doing he was himself throwing away the chance of making a friendship. Somehow I do not think he is a man who would read *The Lancet*; but if this paragraph is brought to his notice, he may rest assured that I think kindly of him and wonder if he still misses the real fullness of life by throwing away the substance for the shadow. So many young Nazis, idealistic, grasping eagerly at a world which will be braver and cleaner than the old world, have done the same, and gone pitiably astray.

* * *

The air-raid precautions of London have to date been responsible for injuries, mostly minor, to 110 patients treated at King's. This is the extent of the physical sacrifice of the neighbouring populace on the altar of its own security. It is a miracle that the sacrifice is not greater still, for not only have we been converted indirectly into blind creatures who have not yet developed that compensatory sixth sense, but obstructions have been strewn in our paths with rare abandon. Strange to tell, the obstructions which have taken greatest toll are those placed there for our peace-time security—the lamp-post and the curb. That silent blind sentinel, the lamp-post, seems literally to step from its fixing and maliciously crack the passer-by over the eye or the nose—its favourite targets. Apart from these 110 cases of blackout injuries, our own staff had two casualties in the shape—or colour, rather—of black eyes. Our irrepressible reception officer, after having steeped himself for a life-time in the incredible terminology of skin diseases, comes out with a new diagnosis on each occasion. Not for him is a black eye just a black eye. Recently it has been a periocular hæmatoma.

The kerb registers a better score than the lamp-post. To date it leads 13 : 7. Its favourite infliction is a Pott's fracture, but it allows itself a fairly liberal field—sprains, bruises, even dislocated fingers, and on one occasion a fractured fifth metatarsal, of which it must be immensely proud. The kerb has an ally, we have found—C_2H_5OH.

Sandbags and trenches, the real war personalities, have not quite done the damage expected of them, though both have made a contribution. What damage they have caused, however, has in the main been a more workmanlike job. Sandbags claim 3 Colles fractures, 2 ribs by simply getting in the way, and 1 serious spinal shock from a low bombing attack. It just fell off the top layer at the right moment, gauging exactly the ground speed of its unfortunate victim.

Of course there are other villains in the piece. Steps in the garden, stairs indoors, wet leaves on the pavement, and tram-lines in the road. After a study of this formidable list of casualties, my advice to my fellow men (and women) is never to ride a bicycle after dark. They are in truth engines of destruction. If you must ignore my advice, and seek death on a bicycle in a blackout, your chances of meeting with it will be greatly increased if you choose a road on which tram-lines are laid.

What of age and sex? I should be accounted no statistician at all (which in any case I am not) if there were no mention of these two incidentals. Well, our youngest is 1 year. Probably his first walk. Our oldest is 79—almost literally her last walk. As for the sexes, which is the less careful? Or which is developing feline vision? Or which goes out most after dark? Or which—but never mind. I cannot in any case supply any of the answers, interesting though speculation may be.

Actually 59 are women and girls and 51 men and boys, so the favours are fairly distributed.

* * *

One's activities as a peripatetic having been limited by the petrol ration, it may be well to consider how the war has been affecting us in our southern suburb. As one walks along the high street of what was once the village from which we have evolved, one seems to see more middle-class middle-aged men than one used. They appear fairly active, they have a couple of dogs on a double leash and carry a basket into which they place their purchases made at the various stores and shops. As in August and September, 1914, there are lots of people without enough to do. They may be divided into those that have got jobs in the services, military or civil, and those who have not. The sprightly middle-aged preponderate among the latter. They have had letters from the W.O., in reply to theirs, thanking them for their offers of service but regretting they are too old, so they go to the pictures and have seen the "Four Feathers," watching intently for any mistake in the manual drill; and when, in the news reel, they saw a film of the boys marching through France they held their breaths and their hearts stood still. They yearned to be there; if the W.O. would have them they would not haggle any more for their old rank. One good thing this picture has done is to stop them boasting about the Great War. "Yes, you boys," they were beginning to say, "you will have to go through it and it will be pretty awful. But it won't be like the Great War. Why, in 1915——." And then they saw Aubrey Smith as the Crimean Veteran saying exactly the same thing in 1898. "There were the Russians. Guns, guns, guns. And there," dipping his finger in a glass of claret, "was the thin red line." They have roared with laughter at the innocent subaltern who said, "I suppose the men were very badly fed, sir"; but since they came out they have ceased to speak of 1914–18. It is about the only laugh we've had in nearly six weeks, with an occasional one caught from Tommy Handley or Arthur Askey. Except however for the necessity of controlling their wander longings and finding little jobs to make themselves think they are busy, the men have had nothing much to worry them. It is on the womenfolk that the strain has been falling, and that is the strain of the black-out. In the war of nerves it is definitely a factor to be considered. This again is affecting those in middle

age rather than the younger evacuees ; and this is not from memories of the last war, for there are many that have had no experience of a bombing-raid. Some have as mates that strange anomaly the man that is useful in the house ; but the most of us are not like that and creep away after we have said, " Can I help you, my dear ? " They have then had the whole responsibility of procuring material, making curtains, putting them up and finding out whether they work. Then, just when they think they have finished, there comes a knock at the door and a polite air-warden draws their attention to the fact that a light is showing from such and such a window. No wonder they have felt themselves abused and ill-treated ! Then came the full-moon and the lights were no longer seen. Now that has gone and the skies are overcast again and each chink blazes down the road like a beacon stirring wardens once more into knocker activity.

We are busy buying bags and suchlike for our gas-masks. This is not mere vanity, for the strings were beginning to cut the cardboard of the boxes. To this however there is one exception. It is our Mary, a little servant from Durham. She firmly refuses. She would buy one for the King, or for Prince Edward ; but for that Hitler, NO !

OBITUARY

ARTHUR PHILIP BEDDARD

M.D. CAMB., F.R.C.P.

EVERY Guy's man who was lucky enough to be a student or house-officer under Beddard, however long ago, can quote his sayings verbatim, for they were of the kind that stick in the mind, but few knew the man himself. He never missed his round but never attended a staff meeting. To his juniors he seemed unapproachable and even frightening; he appeared, debonair and bowler-hatted, at the Front Lodge for his round, taught magnificently, and disappeared again as completely till next time. His visits had something of a descent from Olympus about them, but his words did not need this effect to give them weight.

Elliott & Fry, Ltd.

Arthur Philip Beddard, who died suddenly on Nov. 8, was the son of James Beddard, F.R.C.S., of Nottingham. He was educated at Shrewsbury, Trinity College, Cambridge, where he took a first in both parts of the natural sciences tripos, and Guy's Hospital, where he qualified in 1895. " From about 1898," writes E. I. S., " A. P. Beddard and myself were demonstrators of physiology under E. H. Starling and later M. S. Pembrey. We had common interests in our work, and before long in researches on diabetes and other subjects. I remember the shyness of the first months; in him it took the form of abruptness, beneath which was soon revealed a keen, sensitive and independent mind. A better colleague no man had; and his friendship, his fresh, amusing and downright comments on men and things, and evenings with him at the Pops or in his happy home in Seymour Street became a valued part of my life. He brought to his medicine from the physiological laboratory directness of thought, a searching after causes, and an aversion from publishing any observation, and still more any explanation, that was not confirmed."

In 1900 Beddard was assistant physician at the West London, and a year or two afterwards he was made assistant physician at Guy's. From the first he was a revolutionary. He was quite unaffected by tradition, whether it applied to smoking in the Park (history says he was the first member of the staff to do so) or to the teaching of medicine. He was ruthless in sweeping aside ideas he thought out of date and sometimes his way of disagreeing with his seniors was more forcible than tactful. When he taught physiology he had its clinical applications in mind. Later he was the first to base his teaching of medicine on physiology rather than morbid anatomy, on which it had been built at Guy's for a century, and probably he pushed morbid anatomy too far into the background. He had the kind of clear intelligence—decisive and free of all woolliness—that students want in their teachers, and he combined this with a ready wit and a gift for turning a striking incisive phrase and choosing an apt anecdote. On his round he came to a man who had been in hospital some time with a diagnosis of hepatomegaly. After a short examination Beddard remarked, " This must be one of three things, and two of them are impossible—it is a hydatid "; and so it was. On the 'phone it was just " I am Beddard," and then, " Very well, but if you don't do as I say it will be all over bar the shouting." " When I was up for membership," he used to say, " they showed me a man with aortic regurgitation and mitral stenosis. But I thought I would pull their legs, don't you know, so I said he had pulmonary regurgitation and tricuspid stenosis; and the poor fish couldn't think of a single reason why he shouldn't have." One day during his round a donkey brayed outside; " Ha," said Beddard, with the twinkle that always accompanied these wise-cracks, " a rival concern, don't you know." No student dared miss a word of his teaching lest he miss a yarn that would become a classic. But his success as a teacher did not depend only on his personality and original presentation, for his knowledge of the fundamentals of medicine was profound.

Beneath Beddard's brusque manner was a kindliness and capacity for friendship which endeared him to all who penetrated his armour. His care of his patients was exemplary. The qualities that most impressed a doctor who was under his care during the last war were his amazing thoroughness joined to a truly scientific outlook. " His scorn of scamped work was notorious," he writes, " and it was characteristic of the man that he took little care to conceal it, even when prudence might have counselled reticence." W. R. R. recalls his skill as an after-dinner speaker. " I am asked to reply for the hospital," he said. " That may seem a large order but it is nothing to me: once at Cambridge I replied for the universe." He was a distinguished mason, and the ritual has probably never been more perfectly interpreted than during his mastership. He contributed occasionally to the medical journals, and to Pembrey and Ritchie's " General Pathology " and Allbutt's " System," but on the whole he wrote little. His critical faculties overcame his creative, and he felt all the time that his conclusions would soon need revision. He was, however, entirely in his element as chairman of the Pharmacopœia Commission. " He was largely responsible," writes

Dr. C. H. Hampshire, "for the policy of developing the Pharmacopœia as a book of standards, while still retaining in it those features which are necessary to the maintenance of its position as an authoritative guide to the medical profession in the selection and use of drugs. For nearly four years the commission met weekly to deal with reports, comments and criticisms. Beddard's charm of manner and qualities of leadership made him the ideal chairman; he had great patience, allowing difficult problems to solve themselves in friendly discussion. In private he gave unsparingly of his time and thought to the detailed work. When the sixth British Pharmacopœia was published in 1932 it could truly be said that he was prepared to take personal responsibility for every statement made in it."

Dr. Beddard married Lord Allerton's daughter Evelyn, and he leaves a son and a daughter.

Mr. PERCIVAL DILLON WARBURTON, who died on Nov. 8 at the age of 54, was one of the best-known ophthalmic surgeons in the west of England. He was educated at Wesley College, Sheffield and Sheffield University, and held numerous house appointments at the Royal Infirmary there. He served in the R.A.M.C. in the last war, and afterwards settled in Exeter, where he became assistant surgeon to the West of England Eye Infirmary, being raised to the full staff in 1932. He formed a link between North and South Devon, for he also practised at Barnstaple and was consulting ophthalmic surgeon to the Okehampton cottage hospital. He had suffered from diabetes for some ten years before his death.

MEDICAL NEWS

Royal College of Surgeons of England

A meeting of the council was held on Nov. 9 with Mr. Hugh Lett, the president, in the chair. Mr. R. St. Leger Brockman (Sheffield) was readmitted to the court of examiners for a period of five years. It was decided to hold an additional final fellowship examination in February 1940. The council recognises that it may be difficult for some candidates to comply with the regulations for admission to the final fellowship examination. It has been resolved therefore that those candidates who because of war work have been unable to comply with the regulation that requires six months' residence as house-surgeon in a recognised hospital may apply to the president, through the director of examinations, for special permission to enter for the examination. With his application a candidate must submit a certificate from his commanding officer giving (a) particulars of his appointment in the Navy, Army, or Air Force; (b) the dates of his service with the unit; and (c) an indication of the nature of the duties performed by him during such service. A candidate in the Emergency Medical Service or in a civil hospital should furnish similar particulars signed by the senior surgeon of the hospital in which he may have held the appointment.

Provisional recognition was granted to the dental faculty of the Punjab University so that graduates of the faculty may be admitted to the final examination for the licence in dental surgery on completing six months' general medical and surgical hospital practice in this country.

Diplomas of membership were granted to the candidates named as receiving the licence of the Royal College of Physicians in our issue of Nov. 4 and to P. J. Crowley, A. M. Goldthorpe, Joyce S. Miller, and Aileen E. M. Whetnall.

Further Nobel Awards

The 1939 Nobel prize for chemistry has been divided between Prof. Adolph Butenandt, director of the Kaiser Wilhelm Institute for Biochemistry in Berlin, for his work on sex hormones, and Prof. Leopold Ruzicka (Zürich) for his work on polymethylenes and the higher terpene compounds. The 1938 prize has been awarded to Prof. Richard Kuhn (Heidelberg) for his work on carotenoids and vitamins.

The Nobel prize for physics for 1939 has been awarded to Prof. E. O. Lawrence (Berkeley, California) for his invention of the cyclotron. Last year the Science Museum at South Kensington acquired an example of this apparatus on loan from Professor Lawrence, and it was described in our columns (*Lancet*, 1938, **2**, 859).

Australasian Medical Congress

The sixth Australasian Medical Congress (British Medical Association) which was to have been held in Perth next September has been postponed indefinitely.

University of Sheffield

Dr. J. B. H. Holroyd has been appointed temporary lecturer in anæsthetics while Dr. R. E. Pleasance is on military service, and Mr. James Hardman temporary honorary lecturer in surgical anatomy while Mr. J. C. Anderson is on military service. Dr. W. F. Mindham has been appointed part-time demonstrator in anatomy.

In the faculty of medicine the following external examiners have been appointed: Prof. R. D. Lockhart (anatomy), Prof. R. J. S. McDowall (physiology), Dr. H. L. Tidy (medicine and therapeutics), Mr. E. Rock Carling (surgery), Prof. W. W. C. Topley, F.R.S. (pathology and bacteriology), Prof. W. J. Dilling (pharmacology) Prof. A. L. Robinson (obstetrics and gynæcology), Prof. J. Glaister (forensic medicine), and Prof. H. F. Humphreys (dental subjects).

The committee of management of the Sheffield Hospitals Council (Inc.) will include the junior pro-chancellor, the vice-chancellor, Prof. H. N. Green, M.D., Mr. Albert Harland, and Prof. E. J. Wayne, F.R.C.P.

University of Glasgow

On Nov. 11 the degree of M.D. with commendation was conferred on P. K. Fraser (*in absentia*).

Royal Faculty of Physicians and Surgeons of Glasgow

At the annual meeting of the faculty held on Nov. 6, the following were appointed office-bearers for the ensuing year: president, Dr. J. Souttar McKendrick; visitor, Mr Roy F. Young; hon. treasurer, Mr. William J. Richard; hon. librarian, Dr. W. R. Snodgrass; representative to the General Medical Council, Mr. G. H. Edington; other councillors, Mr. J. Douglas Brownlie, Mr. J. Scouler Buchanan, Dr. Carstairs C. Douglas, Mr. Donald Duff, Dr. John Henderson, Mr. A. J. Hutton, Dr. A. Brown Kelly.

Royal College of Physicians of Edinburgh

A quarterly meeting of the college was held on Nov. 7 with Dr. Alexander Goodall, the president, in the chair. Dr. David Dowie Dunn (Cape Town), Dr. Jiwan Ram Maleri (Punjab, India), Dr. Beatrice Annie Sybil Russell (Colonial Medical Service, Gold Coast), Dr. George Robertson McNab (Birmingham), Dr. Philip Wolfe McKeag (Bath), Dr. Robert Patrick Anderson Macaulay (Trentham, Staffs), and Dr. Harry Winton Dryerre (Edinburgh) were elected to the fellowship of the college.

Medico-Legal Society

The ordinary meetings of this society will be suspended for the time being. The annual dinner which was to have been held in December has been cancelled. The publication of the *Medico-Legal and Criminological Review* will be continued at any rate till the end of 1940.

Royal Society

A royal medal has been awarded by this society to Prof. David Keilin, F.R.S., Quick professor of biology in the University of Cambridge, for his contributions to biochemistry and entomology.

Royal Society of Arts

On Wednesday, Nov. 22 at 2.30 P.M., Sir Leonard Hill, F.R.S., will read a paper to this society on the penetration of rays through the skin and radiant energy in the treatment of wounds. Applications for tickets should be made to the secretary of the society, John Street, Adelphi, London, W.C.2.

Maida Vale Hospital for Nervous Diseases

The outpatient department of this hospital is open daily at 9.30 A.M. The time was incorrectly given in our last issue.

Course in Tropical Medicine

A six-week course in tropical medicine and hygiene will begin on Monday, Jan. 8, at 10 A.M. at the London School of Hygiene. Although certificates of attendance will be given, this course will not in any way qualify for admission to the examination for the diploma in tropical medicine and hygiene. Arrangements have been made to transfer teaching to the school's branch institute at St. Albans, if war conditions should make this necessary. Similar courses will be held from time to time during the year should sufficient applications for admission be received. Inquiries should be addressed to the secretary of the school, Keppel Street, London, W.C.1.

Central London Throat, Nose and Ear Hospital

To avoid blackout and rush-hour travelling for patients it has been arranged for the outpatient department of this hospital to be open every day from 9.30 A.M. to noon as well as at the usual time of 1 P.M. to 3.30 P.M.

The League of Nations and the Drug Traffic

The work of the League of Nations has been overshadowed and interrupted by the outbreak of war. At the instigation of the British Government the meetings of the council and assembly, which were due to be held on Sept. 11, were postponed sine die, owing to the impossibility of securing attendance of members at Geneva. Nevertheless a meeting of the Opium Supervisory Body, set up under the Limitation Convention of 1931, held its fifteenth session from Sept. 5 to 7. The Permanent Central Opium Board also has not suspended operations. It met on Aug. 24 and transacted ordinary routine business, and, in particular, received a report from the Portuguese government on the unsatisfactory narcotic situation in Macao. It was understood that the Portuguese government, as requested by the board, were inquiring into the allegations that had been made. The board has resolved to hold a further meeting shortly when it is hoped the inquiry will have been completed. The president of the board is Sir Atul Chatterjee (India), the vice-president is Mr. Herbert L. May (American), and the other members are M. Salahaddin (Turkish), Sir Malcolm Delevingne (British), Judge Michael Hansson (Norwegian), M. Deagan Miličević (Yugo-Slavian), and Prof. M. Tiffeneau (French). A conference which the council of the League had directed to be held on Oct. 2 of states parties to the 1931 Limitation Convention had to be postponed, as the council had prescribed that it should meet during a session of the assembly of the League. The object of the conference was further to consider the oft-discussed question of extending to dihydrocodeine and its salts certain provisions of the Limitation Convention of 1931 for regulating the manufacture and distribution of codeine preparations. The supervisory body in its September session had the satisfaction of noting that estimates of the several scheduled drugs required for the following year had been received in respect of 51 countries and 90 territories—a total of 141 estimates against 109 estimates received in the corresponding session of the previous year. It is, of course, on these estimates that the limits of legitimate manufacture of the drugs in question and of the world consumption are based.

Royal Northern Hospital

Civilian patients can be received into the wards of this hospital, and the outpatient department is open daily at 9 A.M. and 1 P.M. (Saturdays 9 A.M.). Casualties and urgent cases are admitted at all times of the day and night.

American Research Fellowship

The Women's Medical Association of New York offers a Mary Putnam Jacobi fellowship to any woman doctor, either American or foreign to carry on or complete some special problem in medical research. Applications for the fellowship should be sent by March 1, 1940, to the Secretary of the fellowship committee, Dr. Phebe L. Dubois, 150 East 73rd Street, New York City, from whom further information may be had.

Standard Hæmoglobinometers

In March this year the British Standards Institution circulated for comment a draft specification for British standard hæmoglobinometers. The draft was based on the carboxyhæmoglobin (Haldane) method. As a result the institution has received requests that an acid-hæmatin (Sahli) method, not involving the use of coal gas or carbon monoxide, should also be standardised. Before going on with the additional standardisation the institution wants further information and has, therefore, circulated a memorandum on the subject to medical organisations and doctors known to be interested. Copies can be obtained on application to the Director, British Standards Institution, 28, Victoria Street, London, S.W.1.

Physical Exercises Broadcast

An experimental series of physical exercise broadcasts will begin on Monday Dec. 4. Each broadcast will be of ten minutes' duration, starting at 7.35 A.M. daily, except on Sundays. On Monday, Wednesday, and Friday, a male instructor will direct the exercises at the microphone for men, while on Tuesday, Thursday, and Saturday, a woman instructor will broadcast exercises suitable for women listeners. In each case the exercises will be designed for listeners aged under forty years. If the experiment proves successful, a series of broadcasts for the "over forties" may be introduced later.

The exercises will be suitable for listeners who have little space in their homes, and no expensive equipment will be necessary.

Royal College of Physicians and Surgeons of Canada

Dr. Wilder Penfield, director of the Montreal Neurological Institute, formerly a Rhodes scholar at Merton College, Oxford, was elected president of the college at its recent annual meeting.

Hospital Amalgamation in Bristol

The Charity Commissioners have consented to a scheme for the amalgamation of the Royal Infirmary and the General Hospital. A working agreement has been arrived at for pooling finances and for having one committee and one medical staff. Work continues in both hospitals, but as occasion arises single special departments will be substituted for the two previously existing. Steps are also being taken to establish one comprehensive contributory scheme for the whole of Bristol. At present several small schemes exist, but it would be a manifest advantage if all these were combined.

Board of Control

The headquarters of the Board of Control (Lunacy and Mental Deficiency) is now at Lytham St. Annes.

". . . 'We have had twenty years of experience reëmploying our tuberculous workers. We are quite happy with our results. As for the question of attendance records of these recovered cases, we made a check up a few years ago and found, as we have on previous occasions, that the average attendance record of the recovered tuberculous group as related to sickness absence was better than the average of the whole body of employees' . . . from the medical director of a company employing over 46,000."—Quoted by E. HOCHHAUSER, *Amer. Rev. Tuberc.* Oct. 1939.

NOTES, COMMENTS AND ABSTRACTS

STATISTICS OF THE LONDON VOLUNTARY HOSPITALS

THE annual statistical summary of the work and finance of the London Voluntary hospitals in 1938, issued by King Edward's Hospital Fund for London,[1] covers the activities of 146 hospitals containing nearly 19,000 beds. During the year nearly 300,000 new inpatients were admitted and each occupied a bed for an average period of 19 days; some two million new outpatients made ten million attendances. The cost of medical treatment on this vast scale was £4,832,145 (an increase of £278,000 over 1937) and the income to meet it £4,685,537, leaving a deficit of nearly £147,000. The detailed returns show that 63 hospitals secured more income than was expended while 83 had a deficit. Much of the increased expenditure is reported to be due to the continued rise in the use of special and costly treatments—in the number of operations, of clinical investigations, of X-ray examinations, of expensive drugs and the greatly increased use of special diets. The statistics given for the individual hospitals enable comparisons to be made between those of similar type and should help committees to make check-ups on their expenditure. The total cost per occupied bed for all the 146 hospitals was £227, and for each thousand attendances of outpatients £110. The former figure is composed of £37·8 for provisions, £20·1 for surgery and dispensary, £42·5 for domestic needs (bedding, laundry, fuel and lighting, &c.), £83·6 for salaries and wages, £10·3 for administration, £10·7 for renewals and repairs to building and plant, £15·5 for interest, appeals, rents, rates and taxes, and £6·4 for miscellaneous needs.

CANNED FOOD

Dr. Pangloss writes: In his article on canned foods (*Lancet*, Nov. 4, 1939, p. 991) Sir William Savage considered their nutritive value and possible contaminations, but he did not touch on the æsthetic side—the retention of palatability. With sardines, this is enhanced by the tin; Mr. André Simon has described a "most incredible luncheon" consumed in 1933. The first item was "vintage sardines, 1908, 1910, 1927"; of it he wrote: "I had never dreamt that sardines were at their best in their tin, but they appear to be, provided always that the oil is the best oil, and that you do not forget to turn them over regularly so that the oil is kept moving."

An earlier experiment was related by Dr. A. S. Taylor in his evidence before the food committee of the Royal Society of Arts in 1861. H.M.S. *Blonde* had sailed for the Sandwich Islands in 1826 with tinned provisions, some of which were opened in his laboratory at Guy's Hospital twenty years later and found to be in a good state of preservation.

EPANUTIN AND THE GUMS

EARLY this year Kimball[2] observed hyperplasia of the gums as a complication during the treatment of epilepsy with sodium diphenyl hydantoinate (Epanutin). He noted that, though its severity seemed to vary inversely with the amount of ascorbic acid in the blood, the administration of ascorbic acid or of a diet rich in vitamin C did not reduce its incidence. In recording a series of 75 chronic cases treated in mental hospitals, Blair and his colleagues[3] say that the hospital dentist could find sponginess of the gums in only 2 cases in which it could in any way be attributed to the epanutin given. Steel and Smith[4] noted painful and tender gums in some of their patients, but Williams[5] found no such complication in 91 epileptics treated with epanutin. Hyperplasia of the gums was observed by McCartan and Carson[6] in 1 case out of 19. Frost[7] gave some of his patients a preliminary course of vitamin C and did not report any lesion of the gums; but he drew attention to a new toxic manifestation—epistaxis associated with a raised blood-pressure—in 2 patients who had received a course of vitamin C. Pratt[8] had all his patients examined by the dentist especially for hyperplasia of the gums, with the result that a mild degree of it was found in nearly half of them. Thereupon a similar examination was made of 52 other patients in the same cottages and wards who were on other treatment, and the dentist's findings were almost the same.

THE EUNUCH LOTUS BLOSSOM

Mr. Lancing[9] has attempted to use the novel as the medium for presenting Chinese history to western eyes. His story is about the early life of Tsu Hsi, the late Empress Dowager of China. Infinite plans have been taken to provide an accurate and detailed picture of the Chinese court, but the resulting insistence on details of architecture, topography and court etiquette slows action to a point wellnigh stoppage. The Chinese court has had few rivals in magnificence, pomp and cruelty, and Mr. Lancing does not spare us the intimate details of the concubines and eunuchs. In his hero Lotus Blossom, a court eunuch, the author has attempted a psychological study of the condition, but the attempt is not at all satisfying.

FOILLE

WE have received a brochure on this substance which is manufactured by the Carbisulphoil Company, Dallas, Texas, U.S.A. The distributors for this country are the Anglo-French Drug Company Limited, 12, Guilford Street, London, W.C.1. Foille (pronounced "foil") is described as a stabilised water-in-oil emulsion, containing alcohol, benzocaine, oxyquinoline base, phenol, and some salts and soaps in a vegetable-oil vehicle. It is used in the treatment of burns, whether recent or late and infected. It is applied to the burn with a camel-hair brush, without any attempt at previous cleansing of the injured area; light gauze is then put on and saturated with foille. After 48 hours the gauze is removed and direct applications of the substance are again made at frequent intervals. The area is kept exposed to the air under a heating cage. Apparently foille forms a soft moist yellow crust and is said to coagulate serum protein. The epithelium grows from the edges underneath the crust as in the coagulation treatment of burns. The free mobility of the soft crust is claimed as an advantage over the more rigid coagulum of the present accepted treatment. In infected burns treatment is carried out in a similar way although before applying foille the infected area should be treated by moist dressings or saline baths. Foille can also be used in the treatment of traumatic wounds. Several advantages are claimed for it—the control of pain and shock, the prevention of infection and the hastening of healing. The substance can be used with safety on quite a large burn in spite of its phenol content (2·8 per cent.).

1. Statistical summary of the income, expenditure, work and costs of 146 London hospitals for the year 1938. October, 1939. Pp. 93. 1*s*.
2. Kimball, O. P., *J. Amer. med. Ass.* 1939, **110**, 1244, cited in *Lancet*, 1939, **1**, 1056.
3. Blair, D., Bailey, K. C., and McGregor, J. S., *Lancet*, Aug. 12, 1939, p. 363.
4. Steel, J. P., and Smith, E. S., *Ibid*, p. 367.
5. Williams, D., *Ibid*, Sept. 23, 1939, p. 678.
6. McCartan, W., and Carson, J., *J. ment. Sci.* September, 1939, p. 965.
7. Frost, I., *Ibid*, p. 976; see *Lancet*, July 29, 1939, p. 254.
8. Pratt, C. H., *J. ment. Sci.* September, 1939, p. 986.
9. Lotus Blossom. By George Lancing. London: Robert Hale. 1939. Pp. 352. 8*s*.

THE FINAL CONJOINT

A GROUP of London medical students, who failed to enclose their names so that their letter could be authenticated, write: In Britain one expects fair play even from examiners, so it is with incredulous amazement that we have received the notification of the reintroduction of pathology and bacteriology in the final conjoint examination for those who will be taking it after December this year. This measure is both unjust and cruel: for those who are exempted from it have had ample time and opportunity to complete their pathology course in the normal course of events and under the best teaching conditions obtainable at their medical schools, while those unhappy wretches who will have to take the examination in March and after have had their studies brutally interrupted by the calamity of war, and are not placed under conditions suitable for the study of pathology, which after all is mostly of academical and theoretical interest only. Although we realise that there has been much disorganisation and rearrangement of examining bodies, it is rather disconcerting to find the Conjoint Board in that same state of undecided wavering which has become a by-word in civil life today.

BED-WETTING

THE National Baby Week Council has issued a useful leaflet on bed-wetting for the guidance of parents and the acting parents of evacuated children. Among other simple measures it recommends a matter-of-fact and encouraging view of the trouble; mental and physical calm between tea and bed-time; ample total fluids, for a concentrated urine is irritating, but the last drink of the day half-an-hour before tea; an airy bedroom and light bedclothes; and a regular bowel action without strong purges. Leaflets can be obtained free from the council at 29, Gordon Square, London, W.C.1.

THE DOCTOR'S PETROL.—We are asked to remind doctors applying for supplementary rations of petrol that they will cause delay unless they send (1) their registration book and (2) a properly filled application form.

Appointments

ARMSTRONG, C. N., M.D., B.Hy., M.R.C.P., D.P.H., hon. physician to the Royal Victoria Infirmary, Newcastle-on-Tyne.

LEADER, R. A., L.R.C.P., D.P.H., deputy medical officer of health for South Shields.

Examining Surgeons under the Factories Act, 1937: Dr. A. H. MACGREGOR MCMULLAN (Shipston-on-Stour district, Warwickshire); Dr. A. N. BOUSFIELD (Wooler district, Northumberland).

Colonial Medical Service.—The following appointments and promotions are announced:

BALDWIN, R. B. T., M.R.C.S., medical officer, Nigeria;
CARNEGIE, A. L. DE P., M.B., medical officer, Jamaica;
STARTUP, C. W., Ph.D., professor of physiology and registrar of Medical College, Ceylon;
HARKNESS, J. W. P., M.B. Glasg., D.P.H., director of medical services, Gold Coast;
POYNTON, J. O., B.Chir. Camb., pathologist, Institute for Medical Research, Federated Malay States;
WEBB, W. L., M.B. Lond., D.P.H., senior medical officer, St. Vincent.

Vacancies

Bexhill-on-Sea, Bexhill Hosp.—Res. M.O., at rate of £150.
Birmingham, Royal Cripples Hosp.—Res. H.S., at rate of £200.
Burnley Co. Boro.—Jun. R.M.O., £150.
Cambridge, Addenbrooke's Hosp.—H.P., at rate of £130. Also res. anæsthetist and emergency officer, at rate of £130.
Cardiff King Edward VII Welsh National Memorial Assn.—Area asst. tub. O., £500.
Cardiff, King Edward VII Welsh National Memorial Assn.—Asst. res. M.O. for North Wales Sanatorium, £200.
Chester Royal Infirmary.—H.P., H.S. and H.S. to Orthopædic Dept., £150.
Chichester, Royal West Sussex Hospital.—J.H.S. at rate of £125.
Chorley, Lancs, Chorley and District Hosp.—H.S., at rate of £150.
Durham County Council.—Asst. welfare M.O., £600.
Hampshire.—Asst. co. M.O.H., £733.
Kent Education Committee.—Dental surgeon, £500.
Lancashire C.C.—Asst. co. M.O.H., £800.
Lincoln City.—Deputy M.O.H., £600.
Manchester, Saint Mary's Hosps., Whitworth Park.—Hon. surgeon for children.
Manchester, Royal Children's Hosp., Pendlebury.—Res. M.O., at rate of £150.
Manchester Royal Infirmary.—Chief asst. to Orthopædic Unit, £250.
Manchester, Withington Hosp.—Two res. asst. M.O.'s, each at rate of £200.
National Hosp. for Diseases of the Nervous System, Queen Square, W.C.1.—Registrar, £200.
Nelson Hosp., Merton, S.W.20.—Res. H.S., at rate of £150.
Newcastle Gen. Hospital.—R.S.O., £550.
Nottingham Children's Hosp.—Res. H.S., at rate of £150.
Nottingham City.—Asst. M.O.H., £500.
Oswestry, Robt. Jones and Agnes Hunt Orthopædic Hospital.—H.S. at rate of £200.
Plymouth, Prince of Wales's Hosp., Greenbank Road.—Res. surg. O., at rate of £225. Also sen. H.S. for Devonport Section, at rate of £130.
Princess Beatrice Hospital, Earl's Court, S.W.5.—Two R.M.O's.
Richmond, Royal Hospital.—J.H.S., £100.
Samaritan Free Hosp. for Women, Marylebone Road, N.W.1.—H.S., at rate of £100.
Sheffield Royal Infirmary and Hosp.—Asst. cas. O., at rate of £80.
Staffordshire C.C.—Temporary asst. M.O., £600.
Stoke-on-Trent, North Staffordshire Royal Infirmary.—Res. surg. O., £350.

The Chief Inspector of Factories announces a vacancy for an examining surgeon at Littlehampton, Sussex.

Medical Diary

Week beginning November 20

BRITISH POSTGRADUATE MEDICAL SCHOOL.

DAILY
10 A.M.–4 P.M., Medical clinics, surgical clinics and operations; obstetrical and gynæcological clinics and operations. 1.30–2 P.M., postmortem demonstration.

TUESDAY
2.30 P.M., Lord Horder: Theatre clinic.

WEDNESDAY
11.30 A.M., Clinical-pathological conference (medical). 2.30 P.M., Clinical-pathological conference (surgical).

THURSDAY
2–4 P.M., Dr. Duncan White: Radiological conference.

FRIDAY
2 P.M., Clinical-pathological conference (gynæcological).

ROYAL SOCIETY OF MEDICINE, 1, WIMPOLE STREET, W.1.

WEDNESDAY
Surgery, 2.30 P.M., Dr. J. Trueta: The Treatment of War Fractures by the Closed Method.

ROYAL SOCIETY OF ARTS, JOHN STREET, W.C.2.
WEDNESDAY.—2.30 P.M., Sir Leonard Hill, F.R.S.: The Penetration of Rays through the Skin and Radiant Energy for the Treatment of Wounds.

Births, Marriages and Deaths

BIRTHS

BOYLE.—On Nov. 7, at Nairobi, Kenya, the wife of Dr. William Boyle—a son.
HUNT.—At Ahmednagar, India, the wife of Captain R. S. Hunt, R.A.M.C.—a son.
MILLIS.—On Nov. 8, at Hawkhurst, Kent, the wife of Dr. G. C. Millis—a daughter.
O'ROURKE.—On Nov. 2, the wife of Dr. H. C. O'Rourke, of Greenford, Middlesex—a son.
STOTT.—On Nov. 9, in Oxford, the wife of Dr. N. K. Stott of Chobham—a daughter.

MARRIAGES

ADENEY—ANDERSON.—On Nov. 3, in Perth, Harold Walter Adeney, M.B., to Isabella McDonald Anderson, M.B.
CRUDEN—FURSIER.—On Nov. 6, at Stoke Bishop, William Victor Cruden, M.R.C.S., to Pansy Bernice Emilie Fursier.
SCOTT—BOOTH.—On Nov. 7, at Haifa, Palestine, Captain William Antony McDonald Scott, R.A.M.C., to Marjorie Edith Booth, of Durban, Natal.
STEWART-WALLACE—SCHOOLING.—On Nov. 4, Arthur Maurice Stewart-Wallace, M.D., to Helen Mary Schooling.

DEATHS

BEDDARD.—On Nov. 8, at Sandiway, Cheshire, Arthur Philip Beddard, M.D. Camb., F.R.C.P., of Harley House, N.W.1.
BUTTERS.—On Nov. 9, at Bedford, George Butters, M.B. Edin., aged 75.
CAMPBELL.—On Nov. 3, at Allandale, Northumberland, L. Mabel Campbell, M.B. St. And.
CUNNINGHAM.—On Nov. 10, at Hove, Francis William Murray Cunningham, D.S.O., M.D. Edin., F.R.C.P.E., aged 55.
EBDEN.—On Nov. 10, in Delhi, Major John Alfred Wylde Ebden, M.D., M.S. Lond., F.R.C.S., I.M.S., chief medical officer, Delhi, aged 48.
PARKE.—On Nov. 13, at Westcliff-on-Sea, Charles James Parke, M.R.C.S., aged 84.